geratech®

EGE-HDMV-441SL

4×1 HDMI Seamless Quad Switcher

geratech®

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. Geratech Technology assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.

Geratech Technology assumes no responsibility for any inaccuracies that may be contained in this document. Geratech also makes no commitment to update or to keep current the information contained in this document.

Geratech Technology reserves the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or any of its part translated into any language or computer file, in any form or by any means—electronic, mechanical, magnetic, optical, chemical, manual, or otherwise—without express written permission and consent from Geratech Technology.

© Copyright 2016 by Geratech Technology.

All Rights Reserved.

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

• Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.

• To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.

• Never spill liquid of any kind on or into this product.

• Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.

• Do not attach the power supply cabling to building surfaces.

• Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.

• Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.

• To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

REVISION HISTORY

VERSION NO.	DATE (DD/MM/YY)	SUMMARY OF CHANGE
VR0	07/03/16	Preliminary release
VS1	20/02/17	Updated text and diagrams

geratech®

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

CONTENTS

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

1. INTRODUCTION

This HDMI Switcher is a high performance, low latency, multi-windowing system that can be easily configured for a variety of professional video processing tasks. Up to 4 different input sources may be freely selected and arranged and output to a single display. When switched into single window mode the unit can be a seamless switcher with cross-fade support, or two sources can be combined with the use of chroma keying. 90-degree rotation is also supported when outputting a single full screen window. Additionally, the unit supports the option of uploading a graphic logo for display over the top of the output video. Video resolutions up to 1080p60 and PC resolutions up to WUXGA are supported along with audio up to 192kHz, 7.1 channel, LPCM for both inputs and output. The unit can be controlled in a wide variety of ways, including via front panel buttons with OSD menu, WebGUI, Telnet, RS-232, and IR remote.

2. APPLICATIONS

- Broadcasting control rooms
- Surveillance rooms
- Public commercial displays
- Video conference and digital presentation boardrooms

3. PACKAGE CONTENTS

- 1×4 by 1 HDMI Switcher with PiP/PoP & Multi-Window Display
- 1×Remote Control (CR-124)
- 1×12A/3A Power Adaptor
- 1×Rack Mount Ears (Set of 2)
- 1×Operation Manual

4. SYSTEM REQUIREMENTS

- HDMI source equipment such as media players, video game consoles or set-top boxes.
- HDMI receiving equipment such as HDTVs, monitors or audio amplifiers.

geratech®

# EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

5. FEATURES

- Seamless switching between sources and windows
- Supports PiP, PoP, and multi-window display
- Easy individual window size and position and layer priority adjustment
- Enlarge or shrink up to 4 input windows
- Crossfade, chroma key, mirror, and rotation (90˚ left/right and 180˚) functions
- Supports the uploading of a user customizable graphic for display over the top of video output
- 8 hot keys dedicated to window and source selection, 4 customizable window layout hot keys, and 4 software-only hot keys for additional stored window layout configurations
- Control via front panel with OSD menu, WebGUI, Telnet, RS-232, and IR remote

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel
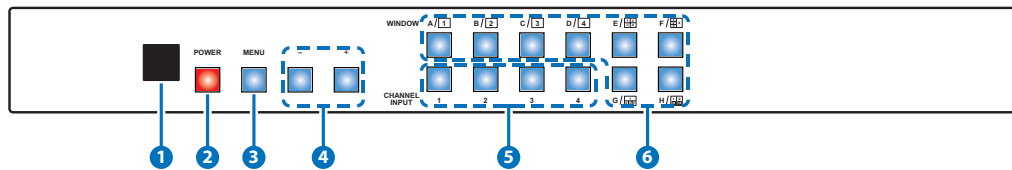
❶ IR WINDOW: Accepts IR signals from the included IR remote for control of this unit only.

❷ POWER: Press this button to power the unit on or place it into stand-by mode. In stand-by mode the button will be lit RED.

❸ MENU: Press this button to enter the OSD menu, or to back out from menu items.

❹ -/+: Press these buttons to move up and down or adjust selections within menus.

❺ CHANNEL INPUT 1~4: Press these buttons to sequentially switch through the available inputs for each associated window channel

(1~4). It is possible for a single input to be displayed in multiple windows simultaneously.

6 **WINDOW A~H:** Press buttons A~D will put the unit into full screen single window mode and display the associated channel's currently selected source (1~4). Switching between windows A~D is seamless, and if the "Fade" option has been turned on a crossfade will occur during the switch.

Press buttons E~H will put the unit into multi-window mode, allowing it to display up to 4 channels simultaneously, and display the associated pre-saved channel window layout. The individual channel window positions, sizes and depth priority can be fully configured via OSD menu, WebGUI, etc. Any changes made to channel position, size or depth will be automatically applied and saved to the current Window. By default the channel depth priority is (top to bottom): CH4 > CH3 > CH2 > CH1.

6.2 Rear Panel
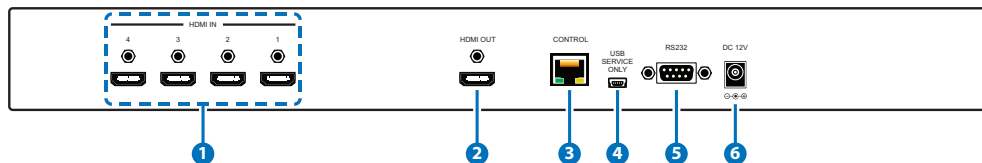
1 **HDMI IN 1~4:** Connect to HDMI source equipment such as media players, game consoles or set-top boxes.

2 **HDMI OUT:** Connect to an HDMI TV, monitor or amplifier for digital video and audio output.

3 **CONTROL:** Connect directly, or through a network switch, to your PC/laptop to control the unit via Telnet/WebGUI.

4 **USB SERVICE ONLY:** This slot is reserved for firmware update, logo file upload, and factory use only.

Logo file requirements: A 256 color bitmap (.bmp) file with a maximum resolution of 512×512 pixels.

Upload procedure: Enter the OSD menu and activate the Load New Logo function (I/O Setup→LOGO Settings→Load New LOGO→Yes) to activate the mini-USB port. The Window A and CH1 button LEDs will illuminate to indicate it has entered logo update mode. You may now connect the unit to your PC via a mini-USB to

EGE-HDMV-441SL

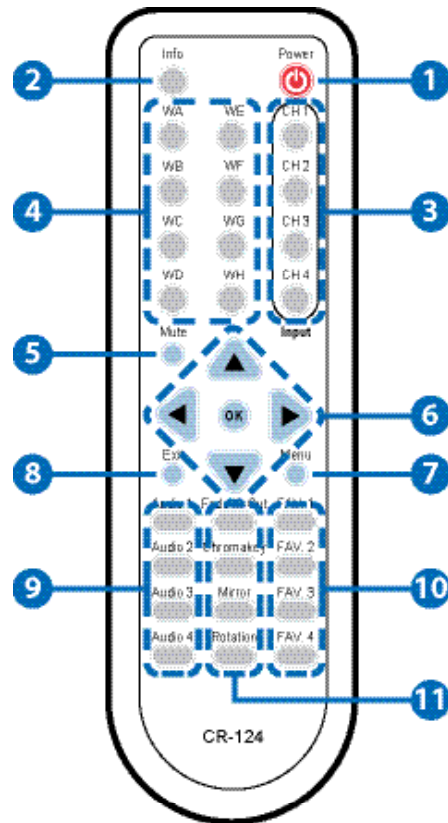**4×1 HDMI Seamless Quad Switcher**

USB cable. The unit should appear as an empty USB drive on your PC named "USB UPDATE".

Drag or copy the logo file into the new "USB UPDATE" drive on your PC and the upload will automatically proceed. All Window and Channel buttons will be illuminated while the upload is in process. After 1~2 minutes the device will automatically reboot and the logo will be available for use.

❺ RS-232: Connect directly to your PC/laptop to send RS-232 commands to control the unit.

❻ DC 12V: Plug the 12V DC power adapter into the unit and connect it to an AC wall outlet for power.

6.3 Remote Control

❶ Power: Press to power the unit on or place it into stand-by mode.

❷ Info: Press to show the unit's firmware version.

❸ CH 1~CH 4: Press to sequentially switch through the available inputs for each associated window channel (1~4).

❹ WA~WH: Press these buttons to select the desired window arrangement for output. WA~WD are for full screen, single window, video output. WE~WH are for multi-window pre-saved channel layouts.

❺ Mute: Press to mute the audio from the HDMI output.

❻ ▲/▼/◄/► & OK: Press the arrows to navigate the OSD menu and press OK to confirm selections.

❼ Menu: Press to enter the OSD menu.

❽ Exit: Press to back out from menu items, or to exit the OSD menus.

❾ Audio 1~Audio 4: Press to select the active audio source from HDMI input source 1~4.

❿ FAV. 1~FAV. 4: Press to activate one of the 4 additional pre-saved channel layouts.

⓫ Fade-In-Out*: Press to toggle the Fade-in-out function on/off.

Chroma Key*: Press to toggle the Chroma Key function on/off.

Note: Channel 1 is always the background and channel 2 is always the keyed foreground image.

Mirror*: Press to display current channel mirrored (left/right).

Rotation*: Press to rotate the image 90˚ left, 90˚ right or 180˚.

Note: For functions with asterisks (*) only work on Windows A~D. The unit will automatically switch to Window A if they are activated while displaying Windows E~H.

6.4 OSD Menu

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
I/O Setup	Output Resolution	480p	
		576p	
		720p50	
		720p60	
		1080p24	
		1080p25	
		1080p30	
		1080p50	
		1080p60	
		1024×768	
		1280×800	
		1280×1024	
		1366×768	
		1440×900	
		1600×900	
		1600×1200	
		1680×1050	
		1920×1200	
		Native	
		Menu Exit	

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
I/O Setup (cont.)	Output Windows	**Window A**	
		Window B	
		Window C	
		Window D	
		Window E	
		Window F	
		Window G	
		Window H	
	Output Windows	Win Fav 1	
		Win Fav 2	
		Win Fav 3	
		Win Fav 4	
		Menu Exit	
	OSD Settings	Info Display	On/**Off**
		H Offset	0~20 **(5)**
		V Offset	0~20 **(5)**
		Timeout	Off~50 **(10)**
		Transparent	0~10 **(2)**
		Menu Exit	
	Logo Settings	Logo Display	On/**Off**
		Logo H-Pos	0~74 **(73)**
		Logo V-Pos	0~68 **(6)**
		Load Def Logo	On/**Off**
		Load New Logo	On/**Off**
		Menu Exit	
	Menu Exit		

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
Image Adjust	Brightness Adjust	CH1	0~100 **(50)**
		CH2	0~100 **(50)**
		CH3	0~100 **(50)**
		CH4	0~100 **(50)**
		Value Reset	
		Menu Exit	
	Contrast Adjust	CH1	0~100 **(50)**
		CH2	0~100 **(50)**
		CH3	0~100 **(50)**
		CH4	0~100 **(50)**
		Value Reset	
		Menu Exit	
	Hue Adjust	CH1	0~100 **(50)**
		CH2	0~100 **(50)**
		CH3	0~100 **(50)**
		CH4	0~100 **(50)**
		Value Reset	
		Menu Exit	
	Saturation	CH1	0~100 **(50)**
		CH2	0~100 **(50)**
		CH3	0~100 **(50)**
		CH4	0~100 **(50)**
		Value Reset	
		Menu Exit	
	Image Still Adjust	CH1	On/**Off**
		CH2	On/**Off**
		CH3	On/**Off**
		CH4	On/**Off**
		Value Reset	
		Menu Exit	
Image Adjust (cont.)	Image Swap	CH 1 CH 2 Swap	
		CH 1 CH 3 Swap	
		CH 1 CH 4 Swap	
		CH 2 CH 3 Swap	
		CH 2 CH 4 Swap	
		CH 3 CH 4 Swap	

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
Window Setup	Channel 1~4 Select	Size	Width Unit
			Width Ten
			Width Hundred
			Height Unit
			Height Ten
			Height Hundred
			Value Rest
			Menu Exit
		Position	Width Unit
			Width Ten
			Width Hundred
			Height Unit
			Height Ten
			Height Hundred
			Value Rest
			Menu Exit
		Image Output	**On**/Off
		Priority	1/2/3/4
		Window Reset	
		Menu Exit	
Window Setup (cont.)	Label Select	Video 1	
		Video 2	
		Video 3	
		Video 4	
		Menu Exit	
	Fav. Store	FAV 1 Store	On/**Off**
		FAV 2 Store	On/**Off**
		FAV 3 Store	On/**Off**
		FAV 4 Store	On/**Off**
		Menu Exit	
	Menu Exit		
Window Convert	Channel 1~4 Convert	Mirror	On/**Off**
		Fade In-Out	**Off**/1.0/1.1/1.2/1.3/1.4/1.5/1.6/1.7/1.8/1.9 /2.0/2.1/2.2/2.3/2.4/2.5/2.6/2.7/2.8/2.9/3.0
		Rotation	L90/R90/180/**Off**
		Window Reset	
		Menu Exit	
	Menu Exit		

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
Chromakey Setup	User 1	Minimum for R/G/B	000~255 **(0)**
		Maximum for R/G/B	222~255 **(255)**
	User 2	Minimum for R/G/B	000~255 **(0)**
		Maximum for R/G/B	222~255 **(255)**
	White	Minimum for R/G/B	000~255 **(233)**
		Maximum for R/G/B	222~255 **(255)**
	Yellow	Minimum for R/G/B	000~255 **(233/233/0)**
		Maximum for R/G/B	222~255 **(255/255/16)**
	Cyan	Minimum for R/G/B	000~255 **(233/0/233)**
		Maximum for R/G/B	222~255 **(255/16/255)**
Chromakey Setup (cont.)	Green	Minimum for R/G/B	000~255 **(233/0/0)**
		Maximum for R/G/B	222~255 **(255/16/16)**
	Magenta	Minimum for R/G/B	000~255 **(0/233/233)**
		Maximum for R/G/B	222~255 **(16/255/255)**
	Red	Minimum for R/G/B	000~255 **(0/233/0)**
		Maximum for R/G/B	222~255 **(0/233/0)**
	Blue	Minimum for R/G/B	000~255 **(0/0/232)**
		Maximum for R/G/B	222~255 **(16/16/255)**
	Black	Minimum for R/G/B	000~255 **(0)**
		Maximum for R/G/B	222~255 **(16)**
	Chromakey	On/**Off**	
	Menu Exit		
Ethernet Setup	IP Mode	**Static**/DHCP	
	Static Set	IP/Mask/Gate	
	Byte1 High	192 **(192)**	
	Byte2	168 **(168)**	
	Byte3	1 **(1)**	
	Byte4 Low	50 **(50)**	
	Time Out	**Off**/10/20/30/40/50/ 60min	
	Re-Link	**No**/Yes	
	Menu Exit		
Audio Setup	Audio Source	Mute/CH1~CH4	
Sys Reset	On/**Off**		
Information	Screen HDMI		
	Native		
	F/W Version		
	F/W Upgrade		
	Menu Exit		
Menu Exit			

Note:

- *Values in **bold** or **( )** are factory default settings.*

- *The "Chromakey Setup" feature only works with Inputs 1 & 2. Input 1 is always the background video and Input 2 is always the top layer with the key applied to it. The part of Input 2 that is to be keyed out (removed) should, ideally, be a single color that is not used anywhere else in the source signal. Typically this is accomplished by using a special blue or green screen behind the recorded video subject. The Red, Green, and Blue key values should be set with as small a range between the minimum and maximum as possible while still maintaining a clean key to help avoid accidental removal of normal video content. When Input 1 or 2 has no live source a warning message will appear on the OSD.*

- *Consult the OSD ("Ethernet Steup" menu) to view the current IP settings if necessary. An Ethernet re-link is required after every IP change.*

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

6.5 RS-232 Protocol

SWITCHER	
Pin	**Assignment**
1	NC
2	Tx
3	Rx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

▶
◀

REMOTE CONTROLLER	
Pin	**Assignment**
1	NC
2	Rx
3	Tx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

Baud Rate: 115200bps
Data Bits: 8
Parity: None
Flow Control: None
Stop Bits: 1

EGE-HDMV-441SL

4×1 HDMI Seamless Quad Switcher

6.6 RS-232 and Telnet Commands

COMMAND	DESCRIPTION
HELP/?	Displays all available commands.
SPOW M	Turn the unit's power on or off (stand-by).
	M = 0 [off], 1 [on]
RPOW	Display the current power state.
SRES M	Set the output resolution.
	Available values for M:
	0 [480p@60Hz]
	1 [576p@50Hz]
	2 [720p@50Hz]
	3 [720p@60Hz]
	4 [1080p@24Hz]
	5 [1080p@25Hz]
	6 [1080p@30Hz]
	7 [1080p@50Hz]
	8 [1080p@60Hz]
	9 [1024×768@60Hz]
	10 [1280×800@60Hz]
	11 [1280×1024@60Hz]
	12 [1366×768@60Hz]
	13 [1440×900@60Hz]
	14 [1600×900@60Hz]
	15 [1600×1200@60Hz]
	16 [1680×1050@60Hz]
	17 [1920×1200@60Hz]
	18 [Native] (Default = **Native**)
RRES	Display the current output resolution.
SIOSDD M	Enable/Disable on-screen information display.
	M = 0 [off], 1 [on] (Default = **0**)
RIOSDD	Display the current state of the on-screen information display.
SOSDH M	Set the OSD's horizontal position.
	M = 0~20 (Default = **5**)
ROSDH	Display the OSD's current horizontal position.
SOSDV M	Set the OSD's vertical position.
	M = 0~20 (Default = **5**)
ROSDV	Display the OSD's current vertical position.
SOSDT M	Set the OSD's visibility duration.
	M = 0 [OSD off], 5~50 [5~50 seconds] (Default = **10**)
ROSDT	Display the current OSD visibility duration.

EGE-HDMV-441SL

4×1 HDMI Seamless Quad Switcher

COMMAND	DESCRIPTION
SOSDG M	Set the transparency level of the OSD. M = 0~10 (Default = **5**)
ROSDG	Display the current OSD transparency value.
SBRI N M	Set the brightness value for a channel. N = 0 [all channels], 1~4 [single channel] M = 0~100 (Default = **50**)
RBRI N	Display the current brightness value for the specified channel. N = 0 [all channels], 1~4 [single channel]
SCON N M	Set the contrast value for a channel. N = 0 [all channels], 1~4 [single channel] M = 0~100 (Default = **50**)
RCON N	Display the current contrast value for the specified channel. N = 0 [all channels], 1~4 [single channel]
SSAT N M	Set the saturation value for a channel. N = 0 [all channels], 1~4 [single channel] M = 0~100 (Default = **50**)
RSAT N	Display the current saturation value for the specified channel. N = 0 [all channels], 1~4 [single channel]
SHUE N M	Set the hue value for a channel. N = 0 [all channels], 1~4 [single channel] M = 0~100 (Default = **50**)
RHUE N	Display the current hue value for the specified channel. N = 0 [all channels], 1~4 [single channel]
SSTILL N M	Set the image freeze state for a channel. N = 0 [all channels], 1~4 [single channel] M = 0 [off], 1 [on] (Default = **0**)
RSTILL N	Display the current image freeze state for a channel. N = 0 [all channels], 1~4 [single channel]

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

COMMAND	DESCRIPTION
SSWAP M	Activate the image swap feature between the specified channels. Available values for M: 0 [Swap CH1 & CH2] 1 [Swap CH1 & CH3] 2 [Swap CH1 & CH4] 3 [Swap CH2 & CH3] 4 [Swap CH2 & CH4] 5 [Swap CH3 & CH4]
RSWAP M	Display current image swap settings for the specified channel pairs. Available values for M: 0 [CH1 & CH2 current sources] 1 [CH1 & CH3 current sources] 2 [CH1 & CH4 current sources] 3 [CH2 & CH3 current sources] 4 [CH2 & CH4 current sources] 5 [CH3 & CH4 current sources]
SPIRE	Reset the brightness, contrast, saturation and hue values for all channels to their defaults.
SIMRE M	Reset the brightness, contrast, saturation or hue value for all channels to its default. Available values for M: 1 [brightness] 2 [contrast] 3 [saturation] 4 [hue]
SHSIZE N M	Set the horizontal size (in pixels) of the specified channel. N = 1~4 [channel] M = 0~X (Max value of X depends on the current resolution.)
RHSIZE N	Display the current horizontal size of the specified channel. N = 1~4 [channel]
SVSIZE N M	Set the vertical size (in pixels) of the specified channel. N = 1~4 [channel] M = 0~X (Max value of X depends on the current resolution.)

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

COMMAND	DESCRIPTION
RVSIZE	Display the current vertical size of the specified channel. N = 1~4 [channel]
SHPOS N M	Set the horizontal position (in pixels) of the top-left pixel of the specified channel. N = 1~4 [channel] M = 0~X (Max value of X depends on the current resolution.)
RHPOS	Display the current horizontal position of the specified channel. N = 1~4 [channel]
SVPOS N M	Set the vertical position (in pixels) of the top-left pixel of the specified channel. N = 1~4 [channel] M = 0~X (Max value of X depends on the current resolution.)
RVPOS	Display the current vertical position of the specified channel. N = 1~4 [channel]
SIMAGE N M	Enable or disable the display of the specified channel. N = 1~4 [channel] M = 0 [disable], 1 [enable]
RIMAGE N	Display the current display status of a channel. N = 0 [all channels], 1~4 [single channel]
SPRI N M	Set channel window layer priority (1 = top, 4 = bottom). N = 1~4 [channel] M = 1~4 [priority]
RPRI N	Show the selected channel's window layer priority. N = 0 [all channels], 1~4 [single channel]
SLABEL N "Name"	Assign a name to a channel. N = 1~4 [channel] "Name" = Up to 9 alphanumeric characters.
RLABEL	Display the selected channel's name. N = 0 [all channels], 1~4 [single channel]
SSTORE M	Save the current channel window arrangement to a user Favorite (FAV) slot. M = 1~4 [FAV 1~FAV 4]

EGE-HDMV-441SL

4×1 HDMI Seamless Quad Switcher

COMMAND	DESCRIPTION
SRECALL M	Select the Window mode or user Favorite channel arrangement to use. Available values for M: 1 [Window A] 2 [Window B] 3 [Window C] 4 [Window D] 5 [Window E] 6 [Window F] 7 [Window G] 8 [Window H] 9 [FAV 1] 10 [FAV 2] 11 [FAV 3] 12 [FAV 4]
SMIRROR M	Enable or disable the mirror effect. M = 0 [off], 1 [on]
RMIRROR	Display the current mirror setting.
SFADE M	Set the fade in/fade out time. Available values for M (in seconds): 0 [off] 1 [1.0] 2 [1.1] 3 [1.2] 4 [1.3] 5 [1.4] 6 [1.5] 7 [1.6] 8 [1.7] 9 [1.8] 10 [1.9] 11 [2.0] 12 [2.1] 13 [2.2] 14 [2.3] 15 [2.4] 16 [2.5] 17 [2.6] 18 [2.7] 19 [2.8] 20 [2.9] 21 [3.0] (Default = **0**)
RFADE	Display the current fade in/fade out setting.

geratech®

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

COMMAND	DESCRIPTION
SROTATE M	Set the full screen output rotation angle. Available values for M: 0 [no rotation] 1 [90° right] 2 [180°] 3 [90° left] (Default = **0**)
RROTATE	Display the current video rotation setting.
SCHRKS M	Select a key color preset for the chroma key. Available values for M: 0 [User 1] 1 [User 2] 2 [White] 3 [Yellow] 4 [Cyan] 5 [Green] 6 [Magenta] 7 [Red] 8 [Blue] 9 [Black] (Default = **0**)
RCHRKS	Display the current chroma key preset selection.
SCHRC N M	Set the Red, Green, and Blue color ranges for the chroma key. Available values for N: 0 [User 1, G max] 1 [User 1, G min] 2 [User 1, R max] 3 [User 1, R min] 4 [User 1, B max] 5 [User 1, B min] 6 [User 2, G max] 7 [User 2, G min] 8 [User 2, B max] 9 [User 2, B min] 10 [User 2, R max] 11 [User 2, R min] M = 0~255 [brightness level]

EGE-HDMV-441SL

4×1 HDMI Seamless Quad Switcher

COMMAND	DESCRIPTION
RCHRC N	Display the current brightness value of the selected chroma key item. Available values for N: 0 [User 1, G max] 1 [User 1, G min] 2 [User 1, R max] 3 [User 1, R min] 4 [User 1, B max] 5 [User 1, B min] 6 [User 2, G max] 7 [User 2, G min] 8 [User 2, B max] 9 [User 2, B min] 10 [User 2, R max] 11 [User 2, R min]
SCHRSW M	Enable or disable the chroma key function. M = 0 [off], 1 [on] (Default = **0**)
RCHRSW	Display the current chroma key function status.
SIPM M	Set the IP mode to either DHCP or static IP. M = 0 [DHCP], 1 [static IP] (Default = **1**)
RIPM	Display the current IP mode.
SIPADD N.N.N.N	Set the static IP address. N = 0~255
RIPADD	Display the current static IP address.
SMAADD N.N.N.N	Set the static IP subnet mask. N = 0~255
RMAADD	Display the current static IP subnet mask.
SGAADD N.N.N.N	Set the static IP gateway address. N = 0~255
RGAADD	Display the current static IP gateway address.
SETHT M	Set the Ethernet timeout. Available values for M: 0 [off] 1 [10 min] 2 [20 min] 3 [30 min] 4 [40 min] 5 [50 min] 6 [60 min] (Default = **0**)
RETHT	Display the current Ethernet timeout value.
RELINK	Re-link the unit after 2 seconds.
RMAC	Display the current MAC address.

EGE-HDMV-441SL

4×1 HDMI Seamless Quad Switcher

COMMAND	DESCRIPTION
IPCONFIG	Display the current Ethernet information.
DEFAULT	Reset the unit to factory defaults.
SVICH N M	Set the selected channel to display the specified video input. N = 0 [all channels], 1~4 [single channel] M = 1~4 [input]
RVICH	Display the current channel video sources.
SMUTE M	Set the mute status of the audio output. M = 0 [mute], 1 [unmute] (Default = **1**)
RMUTE	Display the current mute setting.
SAUDIO M	Set the output audio to the specified input. M = 1~4 [input]
RAUDIO	Display the currently selected audio source.
SCHRE N	Reset the position, size, and priority settings for the specified channel to the factory defaults. N = 0 [all channels], 1~4 [single channel]
SWICORE	Reset the Window A~D rotation and mirror settings to the factory defaults.
RBIOS	Display the BIOS version.
SLOGOD M	Enable or disable the logo display. M = 0 [off], 1 [on] (Default = **0**)
RLOGOD	Display the current state of the logo display.
SLOGOH M	Set the horizontal position (in pixels) of the top-left pixel of the logo. M = 0~X (Max value of X depends on the current resolution.)
RLOGOH	Display the current horizontal position of the logo.
SLOGOV M	Set the vertical position (in pixels) of the top-left pixel of the logo. M = 0~X (Max value of X depends on the current resolution.)
RLOGOV	Display the current vertical position of the logo.
SDEFLOGO	Load the factory default logo.
SNEWLOGO	Begin the new logo upload process.

Note:

- *Values in* **bold** *are factory default settings.*
- *Commands will not be executed unless followed by a carriage return. Commands are not case-sensitive.*

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

6.7 Telnet Control

Before attempting to use telnet control, please ensure that both the unit and the PC/Laptop are connected to the same active networks.

To access Telnet in Windows 7, click on the "Start" menu and type "cmd" in the search field, then press "Enter". Under Windows XP go to the "Start" menu, click on "Run", type "cmd" then press "Enter". Under Mac OS X, go to "Go□Applications□Utilities□Terminal". See below for reference.
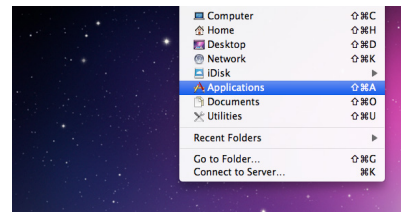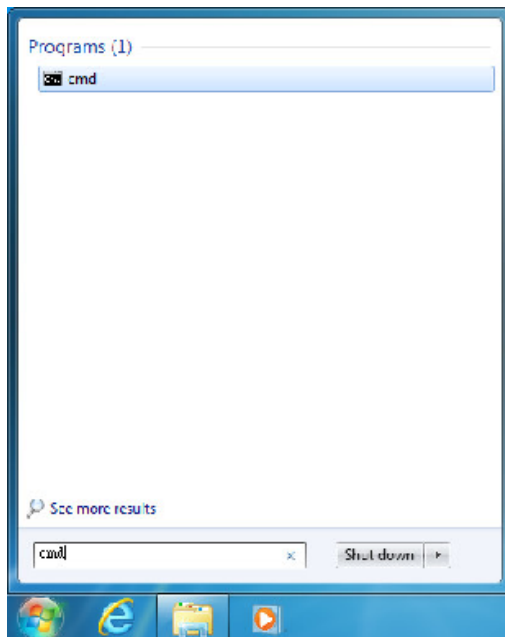
Once in the CLI (Command Line Interface) type "telnet" followed by the IP address of the unit and "23", then hit "Enter".

EGE-HDMV-441SL

4×1 HDMI Seamless Quad Switcher

This will connect us to the unit we wish to control. Type "help" to list the available commands. Type "IPCONFIG" to list all IP configurations. Type "IPMODE" to put the unit into static IP/DHCP mode. For a full list of commands, see section 6.6.

HELP	RHUE	RCHRKS
SPOW	SSTILL	SCHRC
RPOW	RSTILL	RCHRC
SRES	SSWAP	SCHRSW
RRES	RSWAP	RCHRSW
SIOSDD	SPIRE	SIPM
RIOSDD	SIMRE	RIPM
SOSDH	SHSIZE	SIPADD
ROSDH	RHSIZE	RIPADD
SOSDV	SVSIZE	SMAADD
ROSDV	RVSIZE	RMAADD
SOSDT	SHPOS	SGAADD
ROSDT	RHPOS	RGAADD
SOSDG	SVPOS	SETHT
ROSDG	RVPOS	RETHT
SLOGOD	SIMAGE	RELINK
RLOGOD	RIMAGE	SMAC
SLOGOH	SPRI	RMAC
RLOGOH	RPRI	IPCONFIG
SLOGOV	SLABEL	DEFAULT
RLOGOV	RLABEL	SVICH
SDEFLOGO	SSTORE	RVICH
SNEWLOGO	SRECALL	SMUTE
SBRI	SMIRROR	RMUTE
RBRI	RMIRROR	SAUDIO
SCON	SFADE	RAUDIO
RCON	RFADE	SCHRE
SSAT	SROTATE	SWICORE
RSAT	RROTATE	RBIOS
SHUE	SCHRKS	

Note:

- *Commands will not be executed unless followed by a carriage return. Commands are not case-sensitive.*

- *If the IP address is changed then the IP address required for WebGUI or Telnet access will also change accordingly.*

- *Consult the OSD ("Ethernet Steup" menu) to view the current IP settings if necessary. An Ethernet re-link is required after every IP change.*

6.8 WebGUI Control

All primary functions of this unit are controllable via the built in WebGUI. This control is presented across 8 separate tabs, including Image Adjust, Image Swap, Output Resolution, Windows Setup, OSD/LOGO Settings, Window Convert, Chromakey Setup, and Ethernet. Depending on the unit's current operation mode, some tabs will be disabled. The individual functions will be introduced in the following sections.

To access the WebGUI, open a web browser on a PC/Laptop that is connected to an active network and type the unit's IP address (available from the OSD menu) into the web address entry bar.

Common Functions:

The top section of each tab is dedicated to presenting a standard selection of information and basic controls including channel & output information, unit status, source, and window selection, and favorite preset storing.

Image Adjust	Information-In	Information-Out	Status	Source	FAV.Store/Factory
Image Swap	IN1 : 1080P60	OUT : NATIVE	Power : ON OFF	Window Mode : Window E	FAV.Store: Cancel Save
Output Resolution	IN2 : 1080P24	Window Mode : Window E	CH 1 From Input 1	CH 1 From Input 1	
Windows Setup	IN3 : 1080P60		CH 2 From Input 2	Audio From CH 3	Factory Default
SD/LOGO Settings	IN4 : 1080P60		CH 3 From Input 1	Mute : OFF ON	
Window Convert			CH 4 From Input 3		
Chromakey Setup					
Ethernet					

(1)**Information-In:** Displays the detected resolution for each of the 4 window channels.

(2)**Information-Out:** Displays the current output resolution and Window Mode.

(3)**Status:** Displays current input to channel mapping and provides a control to turn the unit on/off (stand-by).

(4)**Source:** Provides controls to set the Window Mode (A~H, Fav1~4), set the input to channel mapping, select the live audio source or to mute the output audio.

(5)**FAV. Store/Factory:** Provides controls to store the current window channel sizes and positioning as a user Favorite (1~4). Click on the "Factory Default" button to reset the entire unit to the factory defaults.
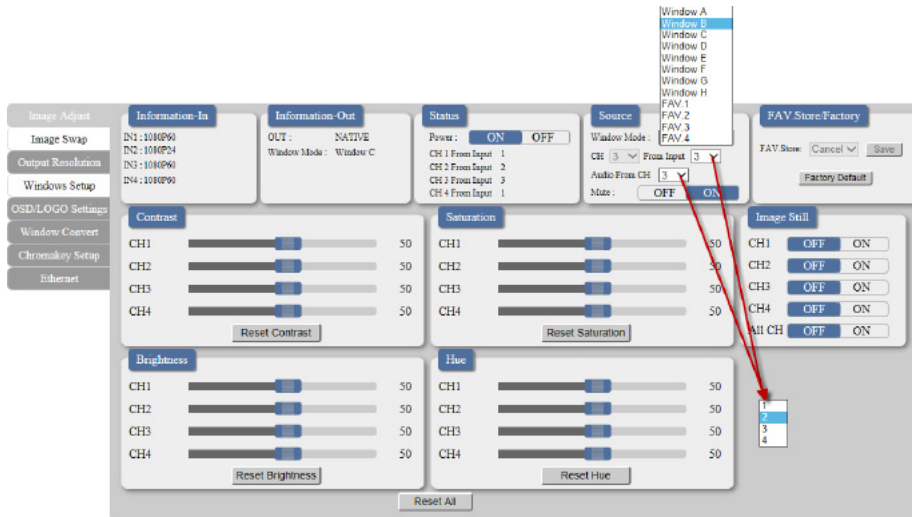
EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher
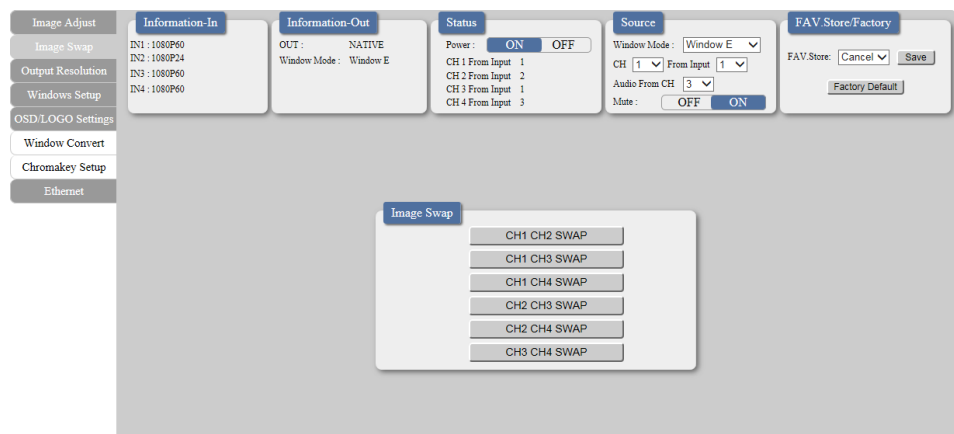
6.8.1 Image Adjust

Select the "Image Adjust" tab to adjust the contrast, saturation, brightness, brightness and hue of each channel window. Additionally, each channel can be paused/un-paused independently, or all at the same time.

6.8.2 Image Swap

(Multi-Window Mode [E~H] only)

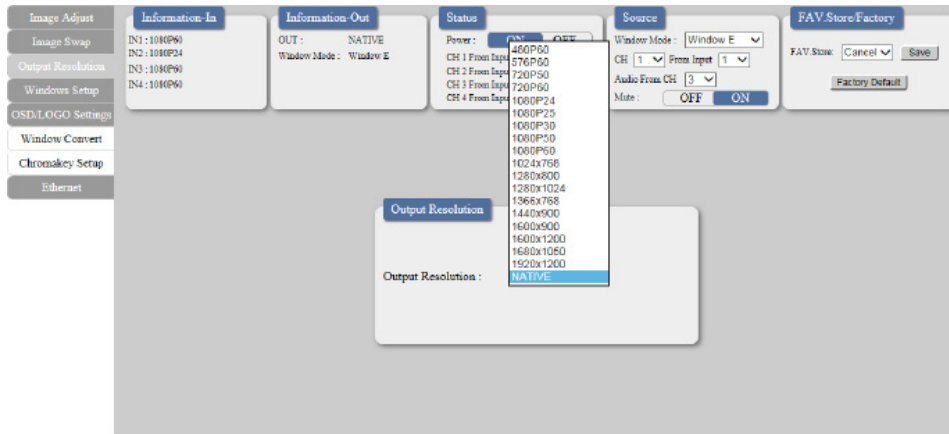Click on the "Image Swap" tab to access a set of quick shortcuts for swapping pairs of channel sources.

6.8.3 Output Resolution

Click on the "Output Resolution" tab to set the output resolution for the unit.

6.8.4 Windows Setup

(Multi-Window Mode [E~H] only)

Click on the "Windows Setup" tab to configure each channel window's size, position, depth priority, and label. The individual channels may also be enabled/disabled. These settings can be directly entered as values on the left side of the tab, or the channel windows can be positioned and resized using the mouse within the graphical representation of the output layout. Click and drag the center of a channel window to reposition it. Click and drag the bottom or right side of a channel window to re-size it. Double-click on a channel window will disable the output of that channel
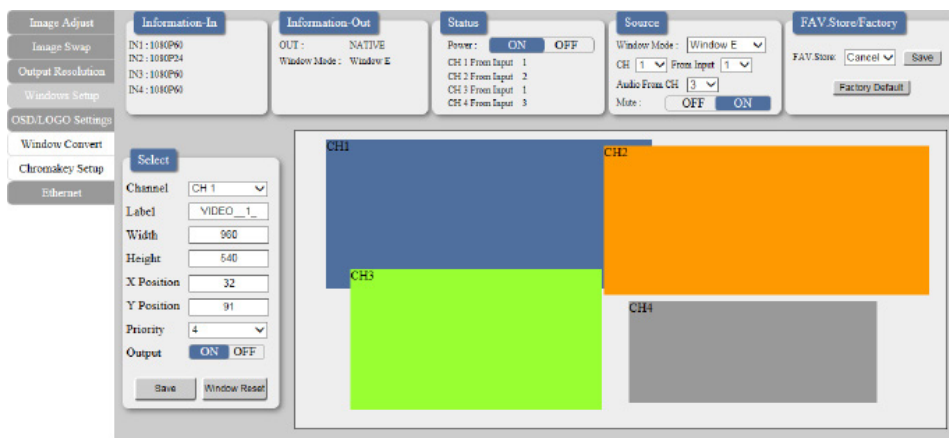
Notes:

- *The positioning coordinates are measured from the upper-left corner of each channel window and the values depend on the selected output resolution.*

- *All changes made via mouse control occur immediately and are saved to the current Window Mode. To apply and save changes made via text entry the "Save" button must be pressed.*

6.8.5 OSD/LOGO Settings

Click on the "OSD/LOGO Settings" tab to configure the OSD & LOGO's function and screen position.
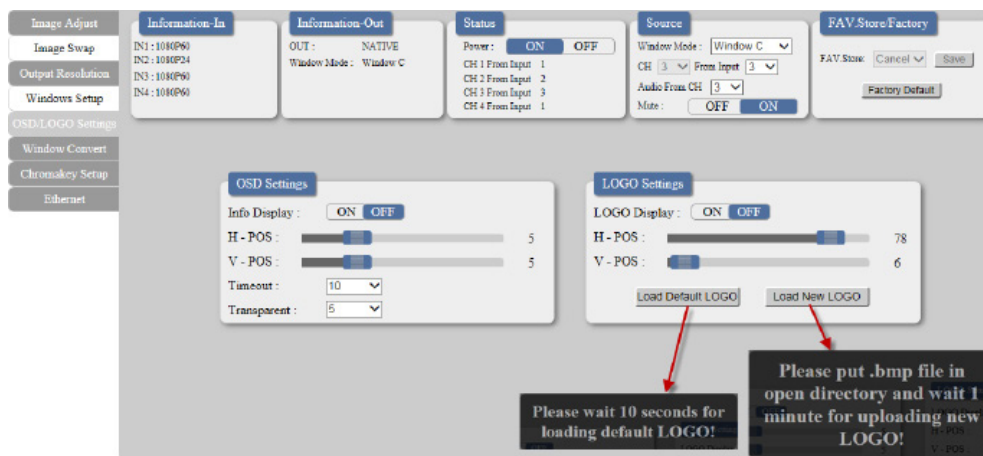
(1) OSD Settings: The OSD info display that appears when an input is changed can be enabled or disabled. Additionally, the OSD Menu position, timeout period, and transparency level can be configured here.

(2) LOGO Settings: This section provides controls for the user uploadable graphic logo function. The logo can be turned on/off and freely positioned in 1% increments. Similar to channel windows the positioning is figured from the top left corner. Activating the logo upload procedure can be done from here or the logo can be returned to the unit's built-in default image.

Note: For detailed Logo upload instructions please refer to section 6.2 "USB SERVICE ONLY".
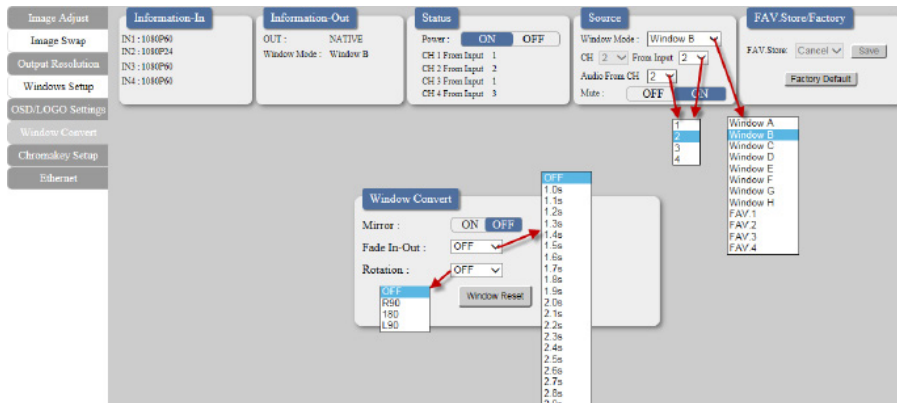
EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

6.8.6 Window Convert
(Single Window Mode [A~D] only)

Click on the "Window Convert" tab to access controls for mirror mode, 90° rotation and crossfade length.

Note: When rotation is enabled, crossfade and chromakey functionality is disabled.

6.8.7 Chromakey Setup
(Single Window Mode [A~D] only)

Click on the "Chromakey Setup" tab to allow the activation and configuration of Chromakey mode. Enabling the Chromakey mode will automatically switch to displaying Input 1 underneath Input 2 with the selected key values applied to Input 2's source video. The unit comes with 8 pre-defined standard key definitions (White, Yellow, Cyan, Green, Magenta, Red, Blue, Black) and 2 User configurable definition sets. When Input 1 or 2 has no live source a warning message will appear on the OSD.
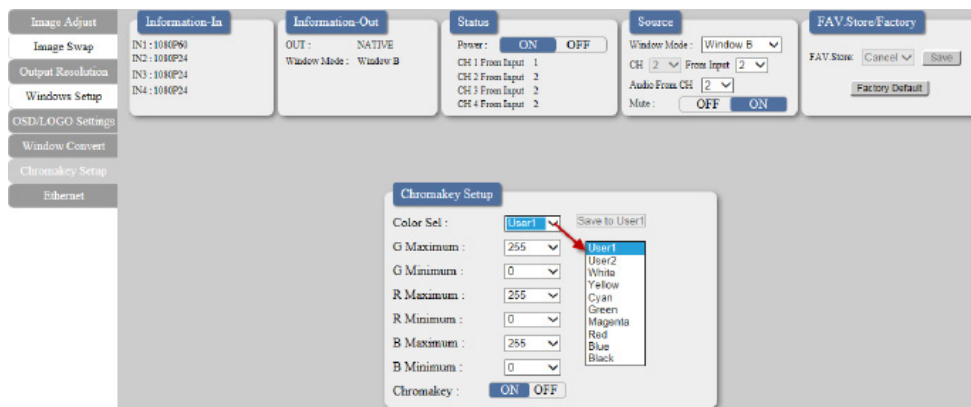
Note: When Chromakey is enabled, crossfade and rotation functionality is disabled.

6.8.8 Ethernet

Click on the "Ethernet" tab to access control of the IP configuration for the unit. The IP Address, Netmask and Gateway can be set manually, or DHCP can be enabled for automatic IP configuration if your local network supports it. The Telnet Timeout can also be set, allowing control of the length of inactivity time before the unit releases its network connection with a network connected control device. Click on "Save Changes" to confirm and activate any changes made to the settings. The unit needs to re-link to the network after any changes have been made and will automatically perform this operation once "Save Changes" has been clicked.
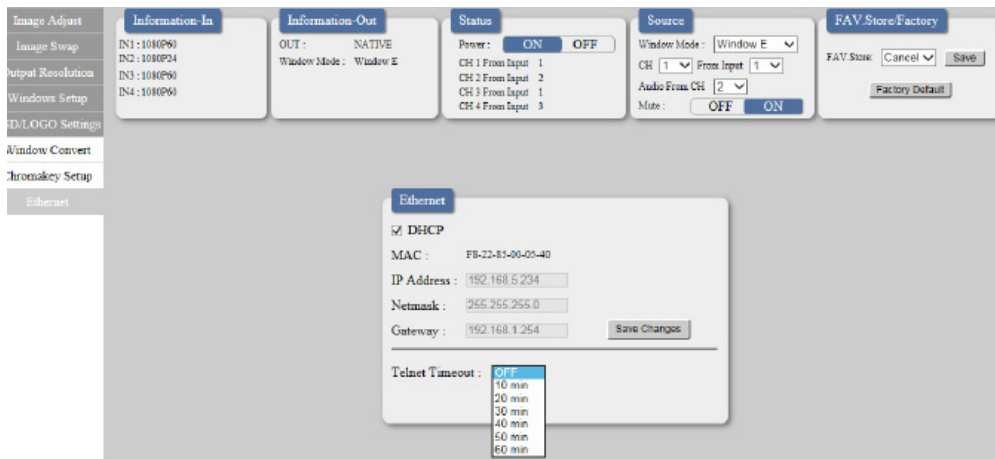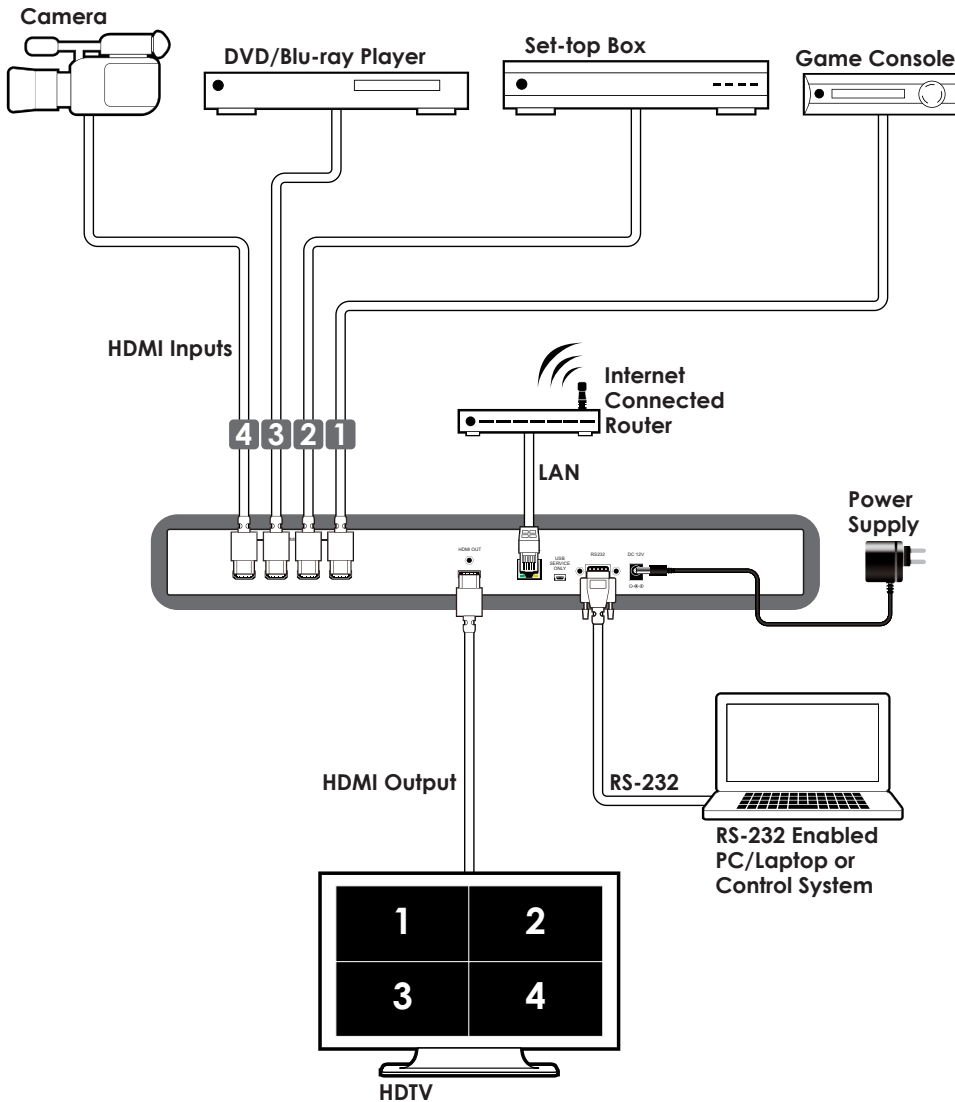

Note: If the IP address is changed then the IP address required for WebGUI or Telnet access will also change accordingly.
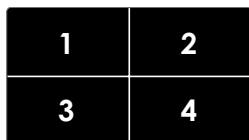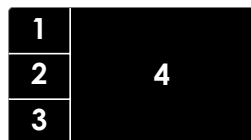
EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher
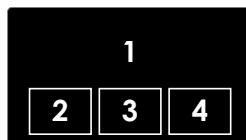
7. CONNECTION DIAGRAMSCREEN CONFIGURATIONS:

Screen Configurations:

Window E   Window F   Window G   Window H
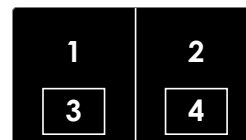
8. SPECIFICATIONS

8.1 Technical Specifications

Video Bandwidth	225MHz/6.75Gbps
Input Ports	4×HDMI
Output Ports	1×HDMI
Supported Resolutions	480i@60Hz - 1080p@60Hz (12-bit)
	VGA@60Hz - WUXGA@60Hz (RB)
HDMI Cable Length	15m (1080p@60Hz, 12-bit)
Power Supply	12V/3A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human Body Model:
	±12kV (Air Discharge)
	±8kV (Contact Discharge)
Dimensions	436mm×44mm×246mm (W×H×D)
	[Case Only]
	436mm×49mm×256mm (W×H×D)
	[All Inclusive]
Weight	2,200g
Chassis Material	Metal
Silkscreen Color	Black
Operating Temperature	0˚C - 40˚C/32˚F - 104˚F
Storage Temperature	−20˚C - 60˚C/−4˚F - 140˚F
Relative Humidity	20 - 90% RH (Non-condensing)
Power Consumption	18W

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

8.2 Video Specifications

Supported PC Resolutions (Hz)	Input	Output
640×480@60	✓	
640×480@72	✓	
640×480@75	✓	
640×480@85	✓	
800×600@56	✓	
800×600@60	✓	
800×600@72	✓	
800×600@75	✓	
800×600@85	✓	
1024×768@60	✓	✓
1024×768@70	✓	
1024×768@75	✓	
1024×768@85	✓	
1360×768@60	✓	
1280×768@60	✓	
1280×768@75	✓	
1280×800@60		✓
1280×1024@60	✓	✓
1280×1024@75	✓	
1366×768@60	✓	✓
1440×900@60		✓
1600×900@60		✓
1600×1200@60	✓	✓
1680×1050@60		
1920×1200@60	✓	

EGE-HDMV-441SL
4×1 HDMI Seamless Quad Switcher

Supported TV Resolutions (Hz)	Input	Output
480i@60	✓	
576i@50	✓	
480p@60	✓	✓
576p@50	✓	✓
720p@50	✓	✓
720p@60	✓	✓
1080i@50	✓	
1080i@60	✓	
1080p@24	✓	✓
1080p@25		✓
1080p@30		✓
1080p@50	✓	✓
1080p@60	✓	✓

9. Acronyms

ACRONYM	COMPLETE TERM
CLI	Command Line Interface
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
GUI	Graphical User Interface
HD	High-Definition
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
IR	Infrared
LPCM	Linear Pulse-Code Modulation
OSD	On-Screen Display
PC	Personal Computer
PCM	Pulse-Code Modulation
USB	Universal Serial Bus
VGA	Video Graphics Array (640×480@60Hz)
WUXGA	Wide Ultra Extended Graphics Array (1920×1200@60Hz)

geratech®

EGERATE