

ez-Pro

VS10

10 Channels 1080p60

Full HD Video Switcher

Revision Number: 1.0.0

Distribution Date: Feb. 2019

Copy Rights

Copyright © 2006~2019 LUMANTEK Co., Ltd.

All Rights Reserved

This document contains information that is proprietary to LUMANTEK.CO., LTD. The information in this document is believed to be accurate and reliable; however, LUMANTEK assumes no responsibility or liability for any errors or inaccuracies that may appear in this document, nor for any infringements of patents or other rights to third parties resulting from its use.

This publication may contain technical issues, inaccurate information or typos. These will be revised in revised edition, if there is any. No part of this publication is subject to be reproduced, stored in retrieval system, or transmitted in any forms, or any means without the prior consent by Lumantek.

Trademarks

HD ENCODULATOR TM, SD ENCODULATOR TM LUMANTEK Logo, Mega CruiserTM, ORIXTM, X-CruiserTM, DTA-PlusTM, Media BlasterTM, are Trademarks of Lumantek. Co., Ltd.

Any other trademarks than stated above in this document belongs to its pertinent corporation.

Warranty Period

Lumantek's products comes with One(1) year limited warranty. Please contact below if you need more information.

LUMANTEK CUSTOMER SERVICES

gs@lumantek.co.kr

TEL:02-6947-7400

FAX:02-6947-7440

Installation Precautions

This page states the safety measures the users must take to avoid circumstances where the system may occur physical damages or injuries. Please THOROUGHLY go over this page before the system installation/operation.

General Precautions

- Maintain dust FREE condition during and after System Installation/Operation.
- Please place the system cover in a safe location when opened.
- Securely stow tools and cables away from the passages.
- Avoid wearing loosened clothes or accessories during installation/Operation.
- Avoid any unnecessary actions that may damage/harm system or personnel.
- Do NOT open the system unless advised by Lumantek representative. Lumantek takes no responsibility on units with broken RMA seals.

Power Precautions

- Please check cable overload before connecting the system to the power supply.
- Avoid wearing metal accessories (Rings, Earrings) connecting system to the power source.
- Avoid operating on wet floors. Make sure power extension cables, floors, and instruments are grounded and in a safe operating condition.
- Please discharge static electricity by touching grounding metals before starting hardware installation.
- The grounding parts must be disassembled last.
- Manufacturer takes no responsibilities on Direct/Indirect losses or damages due to use of inappropriate parts or services by unauthorized service provider
- Supplying power during the system installation may cause damages to the system and personnel.

Contents

1. Introduction	07
(1) VS10 Interface	08
(2) Block Diagram	09
2. Product Configuration	10
3. Interface	
(1) HDMI Multiview Interface	11
(2) Console Interface	12
4. LCD Screen	17
5. VS10 Utility	26
6. System Specification	31

1. Introduction

INTRODUCTION

ez-Liveshow is a brand born through combination of LUMANTEK's encoding and video switching technology especially designed for small studio size event. VS10 is one of the main product of ez-Liveshow brand. It is a stand-alone video switcher with scaler installed giving the ability to set the outgoing resolution from 480i to 1080p60. VS10 allows live monitoring of 10 input video streams, media, test patterns (color bar, color background), PGM, PVW through multiview screen. Internal scalers allows VS10 to synchronize frames, and these can be controlled with console buttons, jog or joystick. Through touch-screen LCD, you can check the PGM video source. VS10 can receive 10 audio sources from the video inputs and 1 extra source from external audio (XLR) input. You can change the volume, mute and change to AFV (audio follow video) modes.

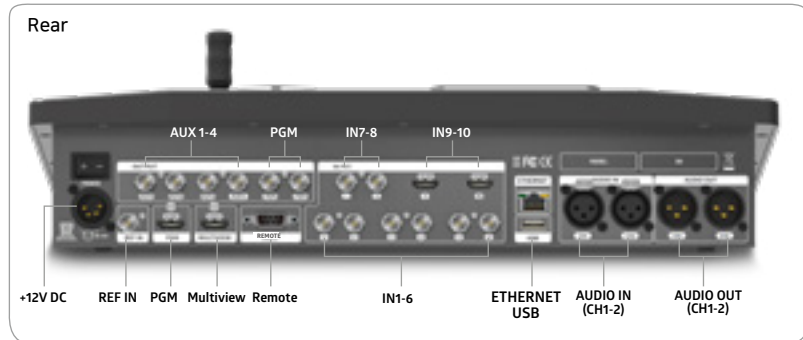
FEATURES

Video Switcher VS10

1. Input : SDI x 8 , HDMI x 2
Output : SDI : AUX x 4 , PGM x 2
HDMI : PGM x 1, Multiview x 1
2. Supports PIP, Key (Chroma/Luma), DSK (Fill/Key)
3. SDI inputs supports both 3G-SDI levels A and B.
4. VS10 has internal scalers in all 10 inputs.
You can use different video resolutions as a source.

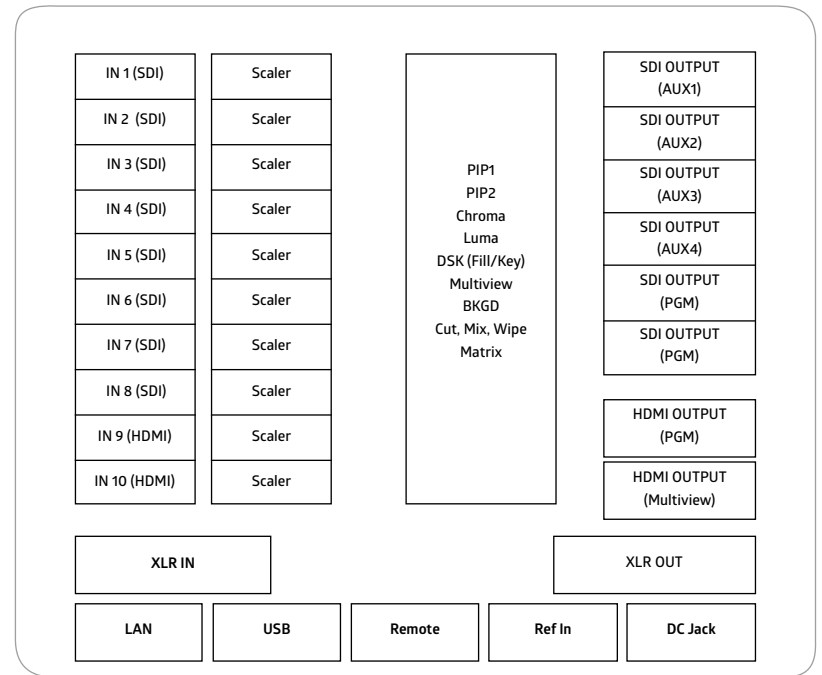
1. Introduction

(1) VS10 Interface

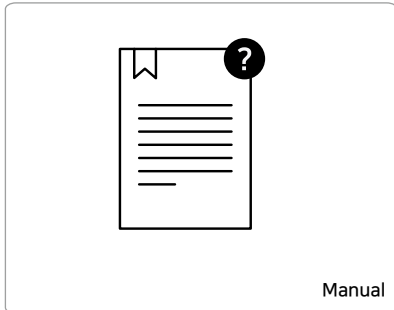


1. Introduction

(2) VS10 BLOCK DIAGRAM

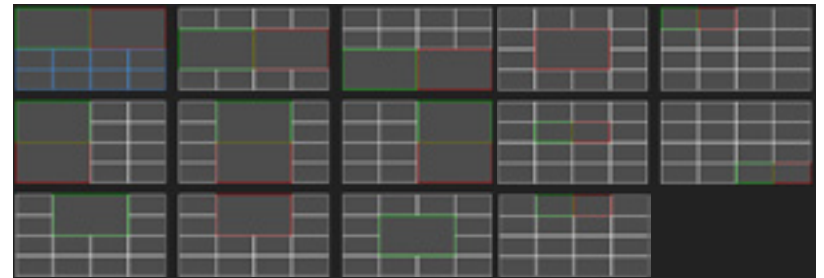
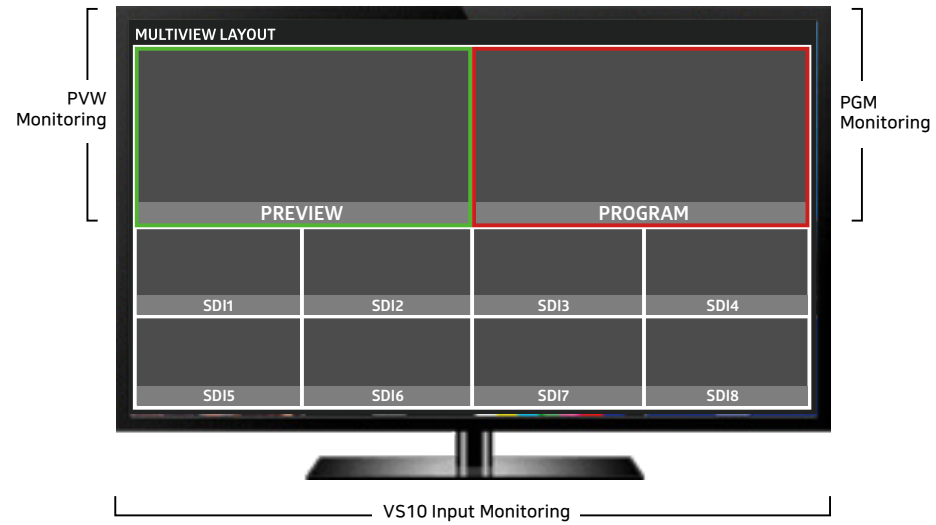


2. Product Configuration



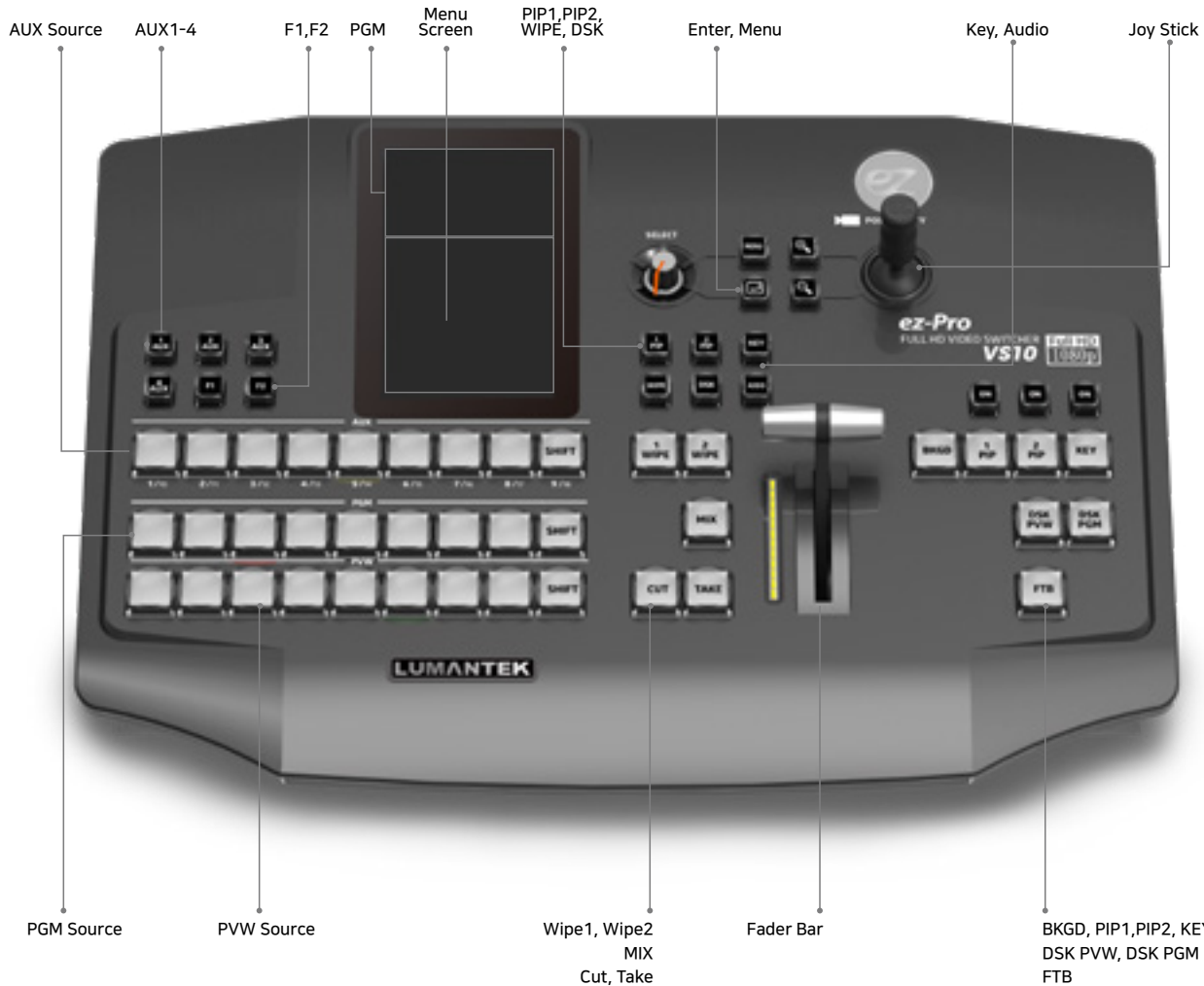
3. Interface

(1) HDMI Multiview Interface



3. Interface

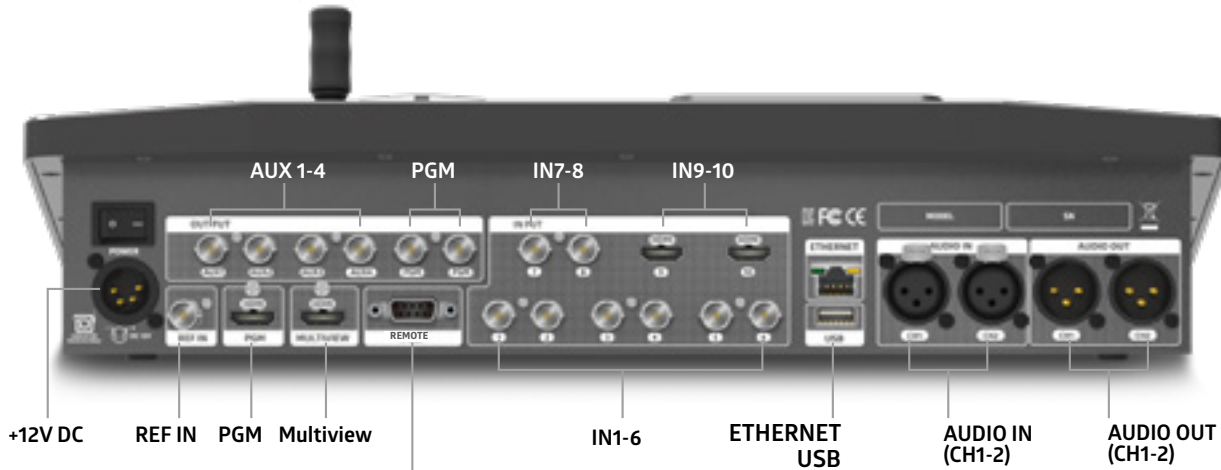
(2) Console Interface



- [AUX1-4] Changes AUX outputs
- [F1],[F2] Undefined
- [PIP1] Go to PIP1 menu
- [PIP2] Go to PIP2 menu
- [KEY] Go to KEY menu
- [WIPE] Go to WIPE menu
- [DSK] Go to DSK menu
- [AUDIO] Go to AUDIO menu
- [JOG] Move through selections
- [Menu] Go to MENU
- [+Zoom In] Changing values of settings
- [- Zoom Out] Changing values of settings
- [ENTER] Enter button
- [Joy Stick] Changing values of settings
- [AUX 소스] Select source for each function
- [PVW 소스] Select PVW
- [PGM 소스] Select PGM
- [WIPE1, WIPE2] Select WIPE transition effect
- [MIX] Select MIX transition effect
- [CUT] Select CUT transition effect
- [TAKE] Automatic transition between PVW and PGM
- [BKGD] Background screen triggered on set to ON
- [PIP1]/[PIP1 ON] PIP1 screen display on PVW and PGM
- [PIP2]/[PIP2 ON] PIP2 screen display on PVW and PGM
- [KEY]/[KEY ON] KEY (Chroma/Luma) screen display on PVW and PGM
- [DSK PVW] DSK display on PVW
- [DSK PGM] DSK display on PGM
- [FTB] Video fades to Black

3. Interface

(2) Console Interface



Remote

Remote (DB9 Female)	Pin	RS-422 Full-Duplex	RS485 Half-Duplex
	Pin1	-	-
	Pin2	-	-
	Pin3	-	-
	Pin4	TXD-	-
	Pin5	Ground	Ground
	Pin6	RXD+	RXD+/TXD+
	Pin7	RXD-	RXD-/TXD-
	Pin8	TXD+	-
	Pin9	-	-

[Power Switch] Power On / Off

[DC 12V IN]



[IN1-8(BNC)] Connects SDI signal

[IN 9-10(HDMI)] Connects HDMI signal

[LAN] Used for debug

[USB] Used for updates

(Firmware update/Multiview/Button Map/Media Player)

[AUDIO IN(XLR)] Audio input socket

[AUDIO OUT(XLR)] Audio output socket

[AUX 1-4, PGM(BNC)] SDI signal output

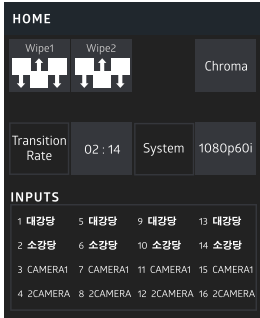
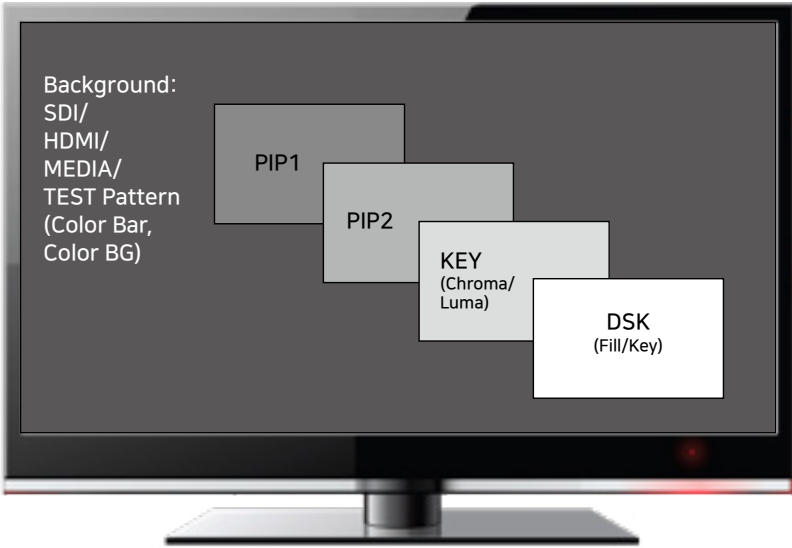
[REF IN(BNC)] Connects reference signal

[PGM(HDMI)] Outputs HDMI signal

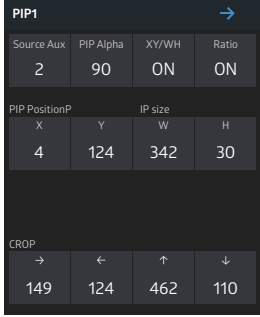
[Multiview (HDMI)] Outputs HDMI signal

[Remote] Used for debug and other control

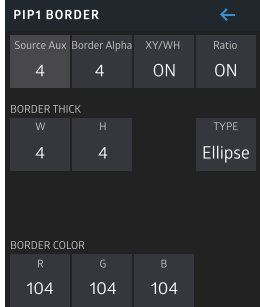
4. LCD Screen



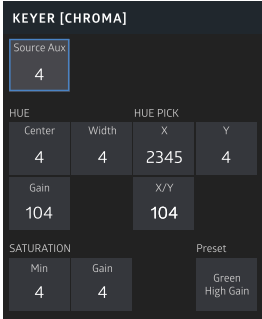
HOME MENU
 [Wipe1] [Wipe2] Shows WIPE1, WIPE2 type
 [Chroma/Luma] Shows selected KEY
 [Transition Rate] Shows AUTO TIME
 [System] Shows VS10 SYSTEM RESOLUTION
 [Inputs] Shows the source given to the button



PIP Menu
 [Source Aux] Go to PIP source selection menu, can be used as AUX button also.
 [PIP Alpha] Select degree of transparency of PIP
 [XY/WH] Select if to simultaneously set values of XY (or WH) or not
 * On : XY (or WH) values change simultaneously
 * Off : XY (or WH) values change independently
 [Ratio] Select if to maintain 16:9 ratio setting values of W and H
 * On : W, H values change maintaining 16:9 ratio
 * Off : W, H values change without maintaining 16:9 ratio
 [PIP Position] Change PIP position
 [PIP Size] Change PIP size
 [Crop(Left, Right, Top, Bottom)] Change PIP crop
 [→] Go to PIP border menu



PIP Border
 [Source Aux] Go to PIP source selection menu, can be used as AUX button also
 [Border Alpha] Select degree of transparency of PIP border
 [XY/WH] Select if to simultaneously set values of XY (or WH) or not
 * On : XY (or WH) values change simultaneously
 * Off : XY (or WH) values change independently
 [Ratio] Select if to maintain 16:9 ratio setting values of W and H
 * On : W, H values change maintaining 16:9 ratio
 * Off : W, H values change without maintaining 16:9 ratio
 [Border Thick(W,H)] Change border thickness
 [TYPE] Select border type (i.e. ellipse, box)
 [R,G,B] Select border color
 * Use jog, +, -, or touch-screen to change values



KEYER MENU [Chroma]

[Source Aux] Go to CHROMA source selection menu (PIP1, PIP2 also selectable as CHROMA source)

[XY] Select if to simultaneously set values of XY or not

[Hue Center, Hue Width, Hue Gain]

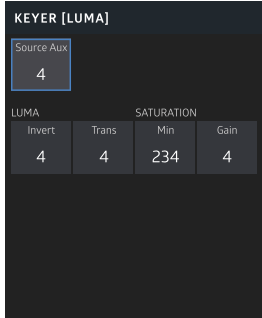
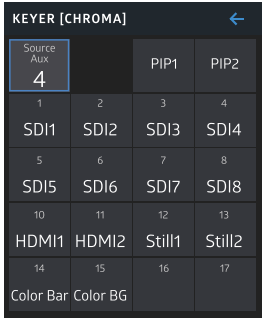
Center : Select the transparency color of the foreground
 Width : Select the range of transparency color of the foreground (hue center 4-90 degrees)

Gain : Select the range of half-transparency of the foreground (0%-100%)

[HUE PICK X, Y] Spoid icon on the Multiview can be controlled with the joy stick. Selected input in SOURCE AUX is shown on the Multiview screen.

[PRESET] Select GREEN HIGH/LOW GAIN, BLUE HIGH/LOW GAIN
 Change made to set values when PRESET is changed

*Use jog, +, -, or touch-screen to change values



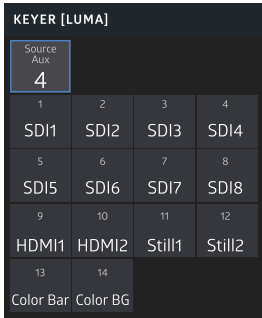
KEYER MENU [Luma]

[Source Aux] Go to LUMA source selection menu (PIP1, PIP2 also selectable as LUMA source)

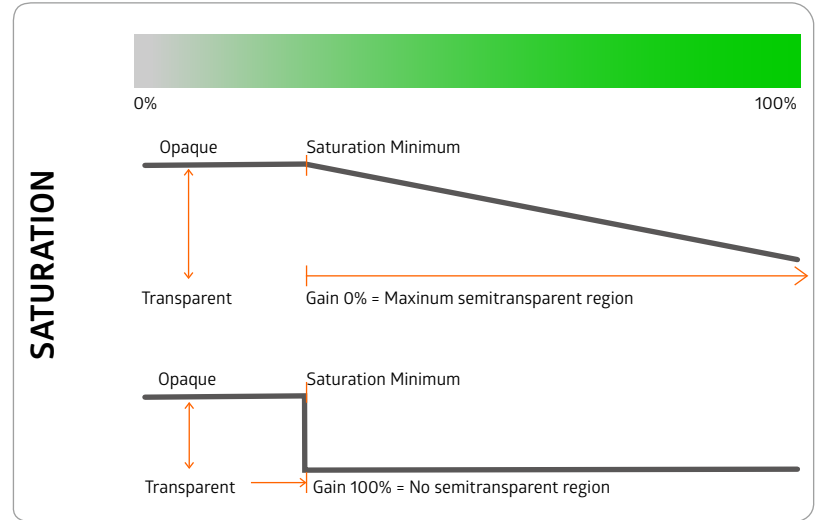
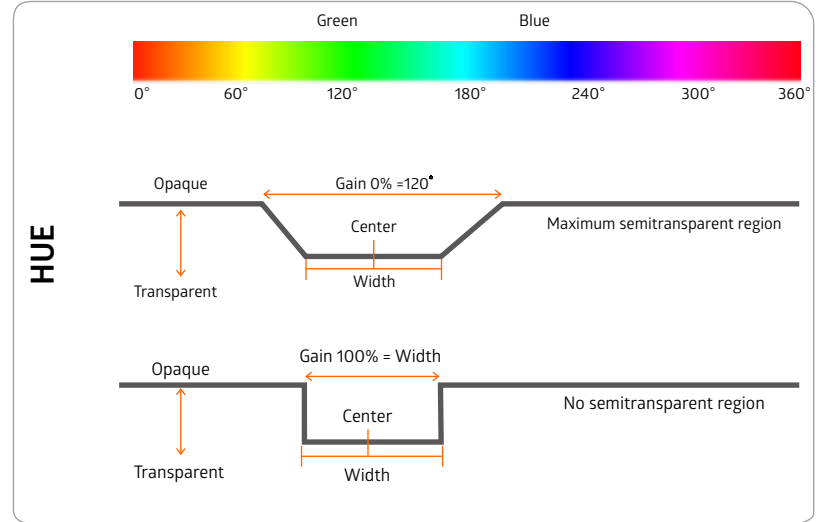
[Luma Invert, Trans, Saturation Min/Gain]

Inv : Set invert off/on
 Transparency: Set transparency of the foreground at its minimum
 Min: Set range of opacity of the foreground
 Gain: Set area of translucency of the foreground (100%: only black turns transparent, 0%: translucent maximum area)

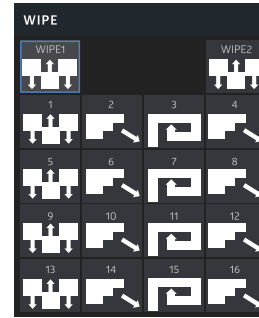
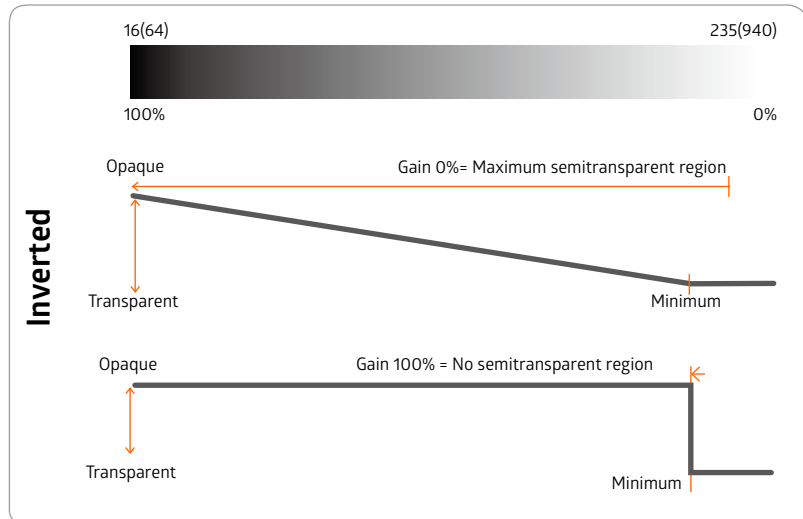
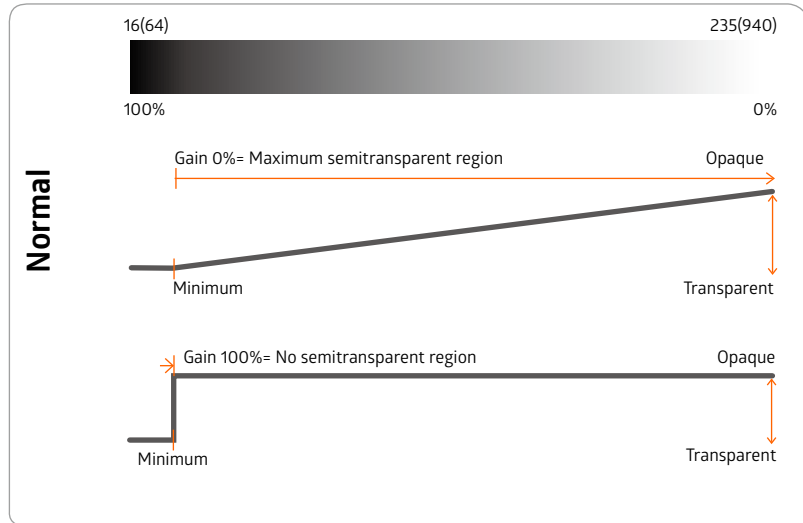
* Use jog, +, -, or touch-screen to change values



CHROMA Key Mode



LUMA Key Mode

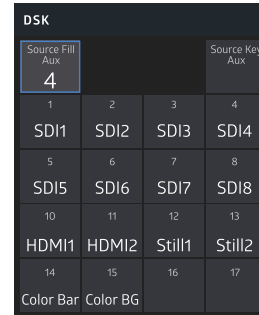


Wipe Menu

* Select WIPE type used in WIPE1, WIPE2

* To select, use:

1. AUX button
2. Touch-screen
3. Rotate jog button to select and select by pressing



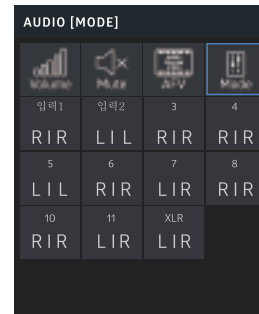
DSK Menu

[Source Fill Aux] Select DSK Fill source

[Source Key Aux] Select DSK Key source

* To select, use:

1. Touch-screen
2. Rotate jog button to select and select by pressing



Audio Menu

[Volume]

Control volume of 10 x input video sources, external audio and outgoing PGM audio (control range is from -90dB to +12dB)

[Mute]

Select to mute the audio volume

1. On: Audio muted
2. Off: Audio unmuted. Volume levels set to user's setting

[Audio Follow Video]

* On : Audio on only when input source is selected as PGM

* Off : Volume level set to user's setting.

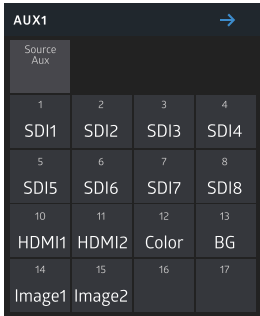
If MUTE is ON then no audio will be outgoing.

[Audio Mode]

* L|L : Use only left audio channel of selected sources.

* L|R : Use left and right audio channel of selected sources separately.

* R|R : Use only right audio channel of selected sources.



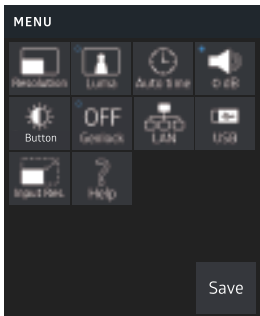
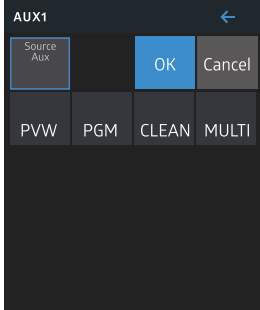
AUX Menu

- * Select AUX output source
- * VW, PGM, CLEAN, MVW can be selected as AUX by pressing blue arrow on the top right-hand corner

* CLEAN is the video without DSK(Fill, Key)

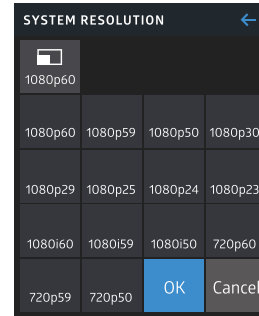
[→] Go to next page

[←] Go to previous page



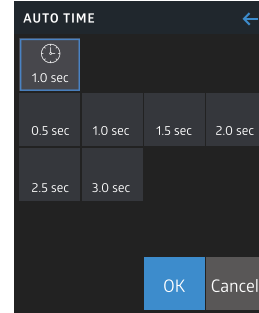
Menu

- [Resolution] Select system resolution
- [Chroma, Luma] Select KEY type
- [Auto time] Set the auto transition time
- [0dB] Select to decrease the external audio levels
 - * 0dB : No audio decrement
 - * -10dB : Decreases -10dB relative to the actual audio input
- [Button] Controls brightness of the console buttons
- [Genlock] Select to use GEN LOCK function
 - * On : Use Ref In
 - * Off : Not use Ref In
- [LAN] Check IP information
- [USB] Load and apply contents to VS10 generated through VS10 Utility software
- [Input Res] Check each resolution of the inputs
- [Help] Check minimum and maximum values of the joy stick and T-bar.
Check the temperature of VS10.
- [Save] Save current settings



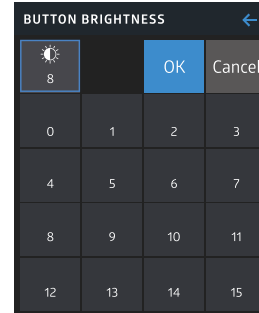
Menu> System Resolution

- * Select system resolution
- * Press OK button to apply and save



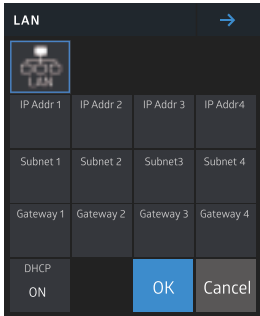
Menu>Auto Time

- * Select transition time
- * Press OK button to apply and save
- * Selected time will be applied to transition time after pressing TAKE button



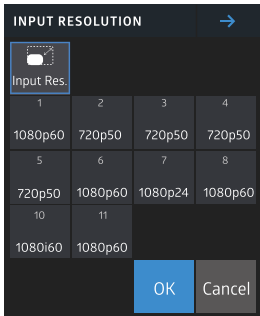
Menu>Button Brightness

- * Select the degree of brightness of the buttons
- * Brightness applied right



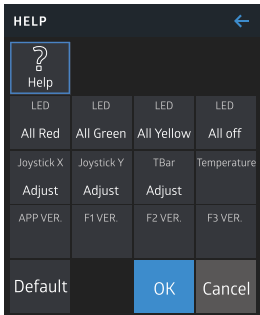
Menu> System Resolution

- * Shows LAN information
- * Change IP address by turning OFF DHCP
- * Save by pressing OK
- * Changes applied after turning off and back on VS10



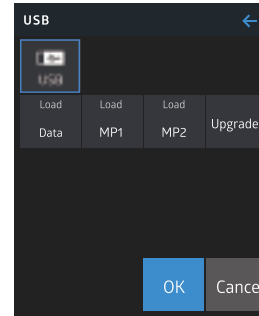
Menu> Input Resolution

- * Shows resolution information of 10 input video sources



Menu> Help

- [All Red] All buttons lighted with Red LED momentarily
- [All Green] All buttons lighted with Green LED momentarily
- [All Yellow] All buttons lighted with Yellow LED momentarily
- [All Off] All buttons LED's off momentarily
- [Joystick X] Saves the maximum and minimum vales of joystick's X axis
 - *Minimum value (x): Move joystick to the left and select
 - *Maximum value (x): Move joystick to the right and select
- [Joystick Y] Saves the maximum and minimum vales of joystick's Y axis
 - *Minimum value (y): Move joystick downward and select
 - *Maximum value (y): Move joystick upward and select
- [Tbar] Saves the maximum and minimum vales of T-bar
 - * Minimum value: Pull down all the way and up a little, then select
 - * Maximum value: Pull up all the way and down a little, then select
- [Temperature] Shows the temperature of VS10
- [Ver] Shows the version of VS10 firmware
- [Default] Turns all values to defalut
- *Media Player 1 and Media Player 2 keeps unchanged
- *Always use ENTER button after selection



Data saved in USB disk can be retrieved in USB menu (Supported USB format is FAT)

3 types of data can be used

1. Data: Multiview layout, button mapping, source names, test patterns (color background) colors
2. Images to store in Media Player 1 and Media Player 2 storage
3. System upgrade

(Warning!)

Do not retrieve the USB disk from VS10 while data is being transferred

Insert the USB disk before moving to USB menu

If any problem is seen, change the USB disk or re-boot VS10

[Load Data]

- * Change VS10 Multiview to 8/13/16 view (Make selection from 12 options)
- * Change input source name
- * Change button mapping

[Load MP]

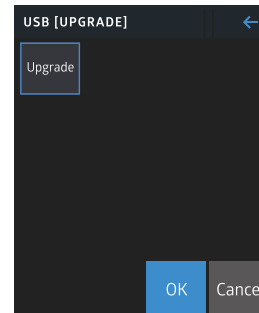
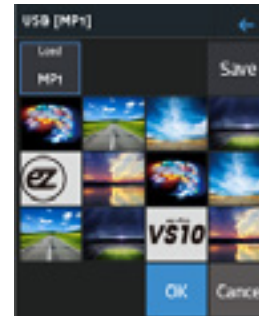
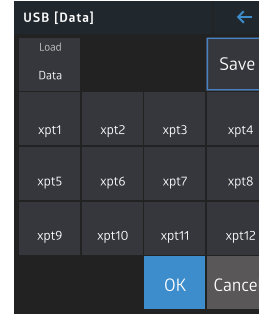
- * Change the image of Media of Media Player 1 / Media Player 2 (Maximum number of selection: 12)
- * Selected media is saved to VS10 by pressing SAVE button (Copy cannot be made if media size goes over the memory capacity)
- * Press OK to preserve current selection but does not COPY media to VS10.
- * Press CANCEL to return to the original media file

[Upgrade]

- * Upgrade VS10 software
- * Opening image can be changed
- * Can change to the default data

[VS10 Utility]

- * Windows and Mac OS versions available



5. VS10 Utility

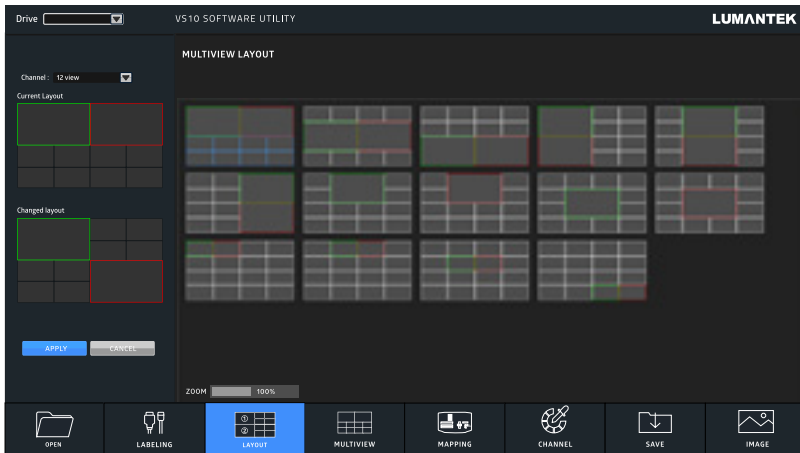
[Labeling]

Select desired port in LABELING tap and change the input name as desired.



[Layout]

Select preferred Multiview layout.



[Multiview]

Multiview layouts are even more customizable at INPUT SOURCE tap (Select the source and drag-n-drop to change positions)



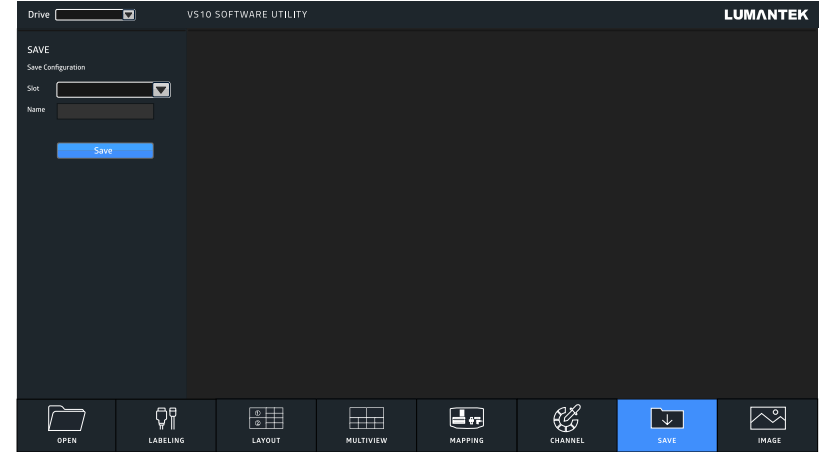
[Mapping]

Map the input port to desired button on the console.



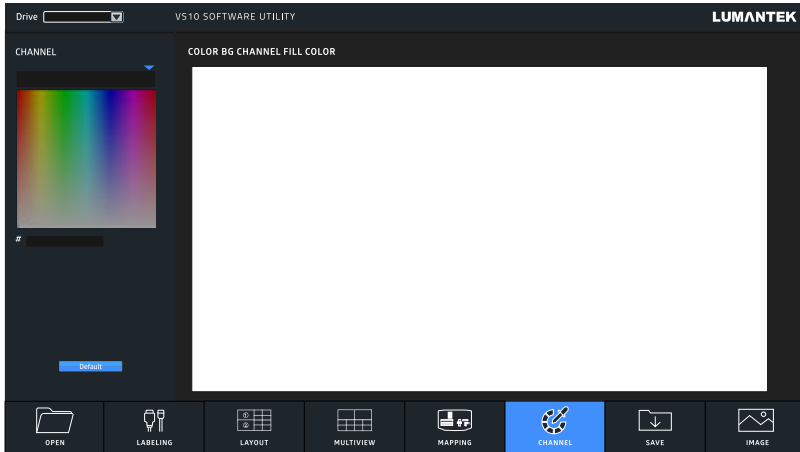
[Save]

Save the setting to the USB.



[Channel]

Select the desired ColorBG.



[Media]

Select the image to save in Media 1 and 2. Select size.



6. System Specifications

Connections	<ul style="list-style-type: none"> · 3G/HD/SD-SDI Input : BNC 75Ω 8ea (with Scaler) · HDMI Input : 2ea (with Scaler) · 3G/HD/SD-SDI Output : BNC 75Ω 6ea (AUX1/AUX2/AUX3/AUX4/PGMx2) · HDMI Output : 2ea (PGM/MULTIVIEW) · Remote: 1ea · Reference Input: 1ea · Ethernet: 1ea(1Gbps, RJ-45) · USB2.0: 1ea · External Analog Audio Input : XLR 2ea · External Analog Audio Output : XLR 2ea · DC 12V: 1ea
Video Format Support	<ul style="list-style-type: none"> · 480i59/576i50 1080p30/1080p29/1080p25/1080p24/1080p23 1080i60/1080i59/1080i50/720p60/720p59/720p50 1080p60/1080p59/1080p50
Video Switcher	<ul style="list-style-type: none"> · Mix & Effect: 1ea · PIP: 2ea · KEY: 1ea(LUMA/CHROMA) · Downstream Keyer: 1ea(FILL/KEY) · Pattern Generator: 2ea(Color Bar/Color BG) · Media: 2ea · Multiview: 8view/13view/16view 1ea · Audio Mixer: 10 stereo input mixer 1ea
Management	<ul style="list-style-type: none"> · TFT-LCD (4.98inch, Capacitive Touch Screen)
Physical	<ul style="list-style-type: none"> · Dimension: 89(H)X400(W)X240(D) (mm, Excluding Connector) · Weight: 3.7kg (8.15lbs)
Environmental	<ul style="list-style-type: none"> · Operating Temperature: 0 ~ 45°C
Power Requirement	<ul style="list-style-type: none"> · Power Input: DC 12V · Power Consumption: 40W(max)

1. Download recent version of the manual from the following link.
(<http://www.lumantek.co.kr/index/download/product/40/q/type/~M~>)
2. Features of this product can be added, removed, changed.

