



CLUX-M2SDI

3G-SDI/HDMI Scaler Box



Operation Manual



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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
RDV1	10/02/12	Preliminary Release
V50	16/07/12	SDI standards updated
VR1	12/04/13	Support timing change from WUXGA to SXGA
VR1.1	04/06/13	RS-232 Pin Assignments
VR1.2	14/11/13	TV Wall Function Option

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1. INTRODUCTION

The HDMI/PC/Component/CV to SDI/HDMI Scaler allows you to upscale HDMI/PC/Component/Composite signals to high definition video of HDMI formats (720p@50/60 Hz or 1080p@50/60 Hz) and SDI formats (HD-SDI SMPTE 292M or 3G-SDI 424M/425M), then output to both ports at the same time. Besides scaling features, the device also carries an optional functionalities for it to serve as control center of video wall up to 15×15 total of 225 displays showing one single picture together.

2. APPLICATIONS

- Simultaneous output on HDMI and SDI display
- Up-scales video resolution to HD output display
- TV/Video/Display/Gaming/Movie wall display (Optional)
- Combination advertising wall

3. PACKAGE CONTENTS

- 3G-SDI/HDMI Scaler Box
- 1×Remote Control (CR-115)
- 1×IR Receiver
- 1×5V DC Power Adaptor
- Operation Manual

4. SYSTEM REQUIREMENTS

HDMI/PC/Component/Composite input source signal and connection cables, output display HDMI & SDI monitors with connection cables.

Or HDMI/SDI splitter with connection and RS-232 cables, output display TV wall with connection cables. (Optional)

5. FEATURES

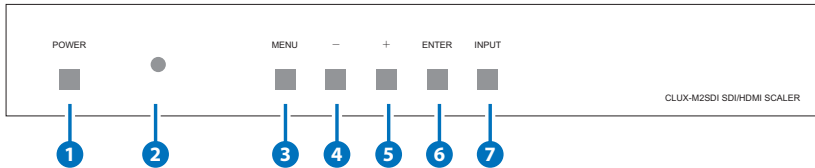
- Supports HDMI, PC, Component and Composite Video input signals
- Supports SDI and HDMI output simultaneously
- Supports SDI output distance up to 100 meters (3G-SDI), or 200 meters (HD-SDI) and 300 meters (SD-SDI)
- Scales any input signal to the following output signals:
 1. HDMI: 720p@50/60 Hz or HD-SDI: SMPTE 292M (1.485 Gbit/s)
 2. HDMI: 1080p@50/60 Hz or 3G-SDI: SMPTE 424M/425M (2.970 Gbit/s)
- Supports HDMI input timings: VGA@60 ~ SXGA@75 & 480p/576p ~ 1080p@50/60 Hz
- Supports VGA input timings: VGA@60 ~ SXGA@60 Hz & 1920×1080@60 Hz
- Supports Component input timings: 480i/576i ~ 1080i/p@50/60 Hz
- Supports Composite Video input timings NTSC, PAL
- Supports video wall controlling (Optional)

Note: Tested with Belden 1694A cable. Results may vary with cables that have a different specification.



6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



1 POWER

Press this button to switch on the device(s). All the connected Video wall system control device(s) will be switch to ON.

2 IR Remote Control Sensor

3 MENU

- Press this button to enter into the OSD main menu.
- Under Picture & Setup Menu, press this button to move down the selection.

4 DOWN

- Press the DOWN button to move down the selection in the OSD main menu.
- When in Picture & Setup Menu, press DOWN button to show the individual setup slide bar and continue press the button to reduce the value.

5 UP

- Press the UP button to move up the selection in the OSD main menu.
- When in Picture & Setup Menu, press UP button to show the individual setup slide bar and continue press the button to increase the value.

6 ENTER

- Press ENTER to confirm the selection.

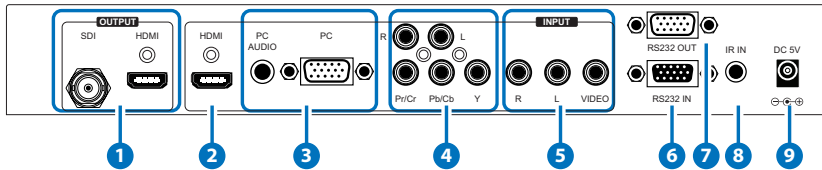
7 INPUT

- Press to select the input sources.

- b. When enter the OSD menu, press INPUT button to exit the setup.

Note: Points a/b defines multiple usage of the key button.

6.2 Rear Panel



1 SDI/HDMI OUT

These slots are where you connect the SDI/HDMI display. Both slots are output simultaneously.

2 HDMI IN

Connect the HDMI input port to the HDMI/DVI output ports of your source equipment such as DVD/Blu-ray player or set-top-box.

3 PC with PC AUDIO IN

Connect the PC/audio input port to the PC/audio output port of your source equipment such as Laptop or PC.

4 Component with R/L IN

Connect Component and R/L input port to the component and R/L output port of your source equipments such as DVD/Blu-ray player or set-top-box.

5 Video with R/L IN

Connect Video and R/L input port to the Video and R/L output port of your source equipments such as DVD player or set-top-box.

6 RS-232 IN

This slot is to connect with PC/NB equipment for RS-232 control. For detail RS-232 commands please refers to section 8.

7 RS-232 OUT

This slot is to connect to the next RS-232 IN.



8 IR IN

This slot is to connect with IR receiver included in the package for receiving the IR signal of the device' remote controller.

9 Power

Plug the DC 5V power supply into the system and connect the adaptor to AC wall outlet.

6.3 OSD Menu

Main Menu		2 nd Layer	
MAIN MENU	PICTURE MENU*1	STANDARD	ON/OFF
		R OFFSET	0~255 (118)
		G OFFSET	0~255 (116)
		B OFFSET	0~255 (118)
		R GAIN	0~255 (098)
		G GAIN	0~255 (098)
		B GAIN	0~255 (098)
		CONTRAST	0~63 (50)
		BRIGHTNESS	0~63 (40)
	SETUP MENU*1	LANGUAGE	ENG / T.CHINESE (ENG)
		HDMI SOUND	ON/OFF (ON)
		STANDARD*3	ON/OFF (ON)
		H POSITION START*4	000~385 (*2)
		V POSITION START*4	000~53 (*2)
		H Blanking Edit*4	0~255 (20)
		V Blanking Edit*4	0~255 (20)
		TV Option Width*4	1~15 (1)
		TV Option Height*4	1~15 (1)

***Note:**

1. The Picture Menu allows users to adjust single monitor's setting while the Setup Menu will only needs to be adjust once and all monitors will be automatically adjusted.
2. Suggest to set the SETUP MENU's STANDARD to ON after a change of the timings to obtain the best position under TV wall function.



3. The SETUP MENU's STANDARD can only be adjust under PC mode.
4. Optional TV wall functions.

Picture Standard: Set it to ON will allow system to set the picture menu into the default value as indicated in the ().

Picture R/G/B Offset: These functions are to set the single picture's R/G/B brightness.

Picture R/G/B Gain: These functions are to increase or decrease the color of single picture's R/G/B.

Picture Contrast: This function is to set the single picture's color contrast.

Picture Brightness: This function is to set the single picture's brightness.

Setup Language: There are two language available in the OSD and they are English and Traditional Chinese.

Setup HDMI Sound: This function is to set the HDMI output audio sound to be ON or OFF.

Setup Standard: Set it to ON will allow system to set the setup menu into the default value as indicated in the ().

Setup H/V Position Start: These functions are to set the total value of the vertical and horizontal value of the TV wall.

Setup H/V Zoom Size: These functions are to set the total value of the vertical and horizontal zoom in and zoom out size of the TV wall.

Setup H/V Blanking Edit: These functions are to set the total value of the vertical and horizontal value of the blanking area of the TV wall.

Setup TV Option Width: This function is to set the numbers of the TV/ display that is to be on a horizontal line of the TV wall.

Setup TV Option Height: This function is to set the numbers of the TV/display that is to be on a vertical line of the TV wall.

6.4. Remote Control

1 POWER*

Press this button to switch on the device(s). All the connected Video wall system control device(s) will be switch to ON.

2 POWER OFF*

Press this button to switch off the device. All the connected Video wall system control device(s) will be switch to OFF.

3 SINGLE*

Press this button to set the image to be displayed on each and every connected TV/monitor identically. (Optional Function)

4 FULL*

There are 6 options of setting an image to be displayed on TV/monitor and they are 2x2, 3x3, 4x4, 3x2, 4x3 and 5x5. (Optional Function)

5 ▲▼◀▶& OK

Press the arrow buttons to select and adjust the selection in the OSD menu and value or to select the display. Press OK to confirm the selection and all the displays will be adjusted in once. If OK is not pressed only the first display will be adjusted to the selected value

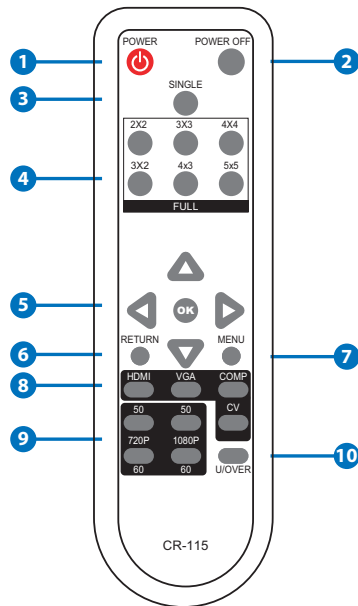
6 RETURN

Press this button to return to the last layer of OSD selection or to exit the OSD.

7 MENU

Press this button to enter into the OSD menu. When the setting is selected and confirmed all the output display will automatically changed to the selected settings.

8 HDMI/VGA/COMP/CV*





Press the hot key to select the input sources.

9 720p/1080p@50/60*

Press the hot key to select 720p@50 Hz, 720p@60 Hz, 1080p@50 Hz and 1080p@60 Hz timings for HDMI output, the SDI output timings will be automatically converted to SMPTE 292M (1.485 Gbit/s) and SMPTE 424M/425M (2.970 Gbit/s)

10 U/OVER

Press this key to change the output image to be overscan or underscan.

*Function that automatically adjusts all monitors in once.

6.5 RS-232 Pin Assignments

RS-232 IN			RS-232 OUT	
PIN	Assignment		PIN	Assignment
1	NC		1	NC
2	TxD	→	2	RxD
3	RxD		3	TxD
4	NC		4	NC
5	GND	←	5	GND
6	NC		6	NC
7	NC		7	NC
8	NC		8	NC
9	NC		9	NC

Baud Rate: 19200 bps

Data bit: 8-bit

Parity: None

Stop Bit: 1

Flow Control: None

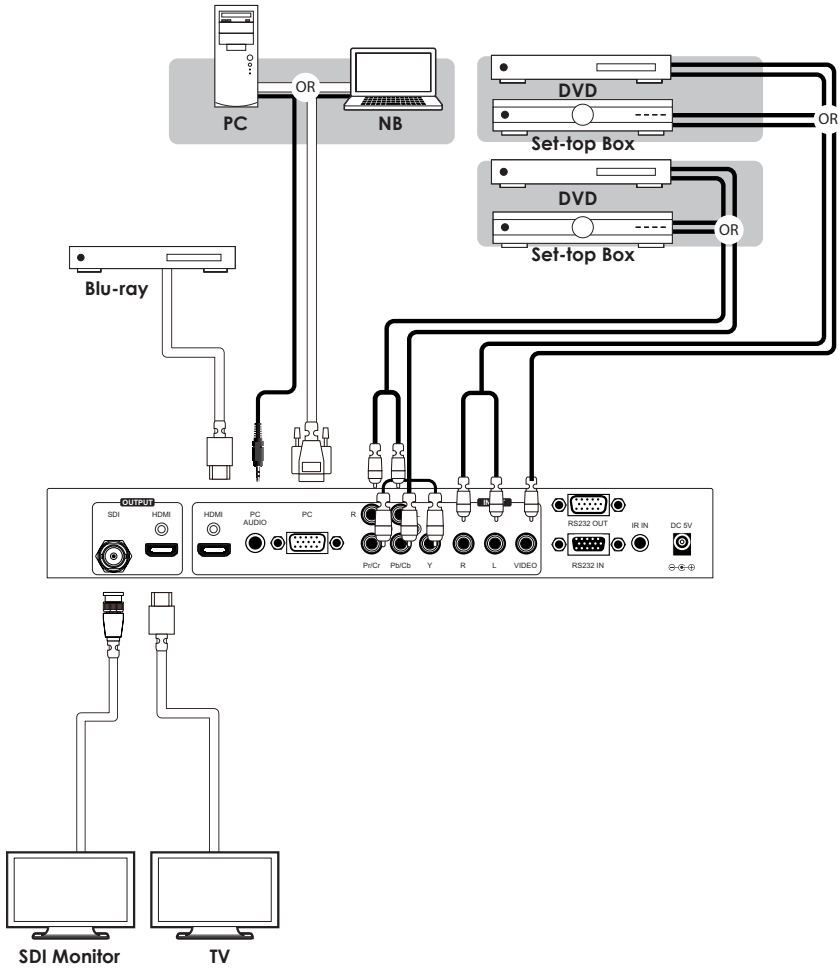
6.6 RS-232 Commands

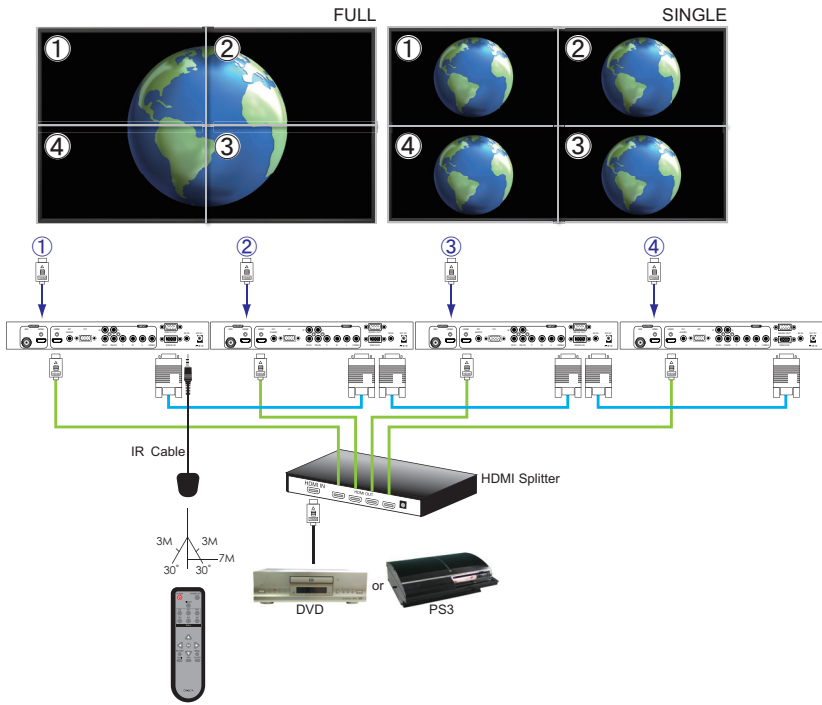
COMMAND	ACTION
0x23 0x53 0x30 0x30 0x31 0x23	POWER ON
0x23 0x53 0x30 0x30 0x30 0x23	POWER OFF
0x23 0x43 0x30 0x30 0x30 0x23	*UNDER SCAN
0x23 0x43 0x30 0x30 0x31 0x23	*OVER SCAN
0x23 0x43 0x52 0xWH 0x00 0x23	*Note
0xEF 0x05 0xD7 0xC0 0x22 0x0F 0xEE	CHANGE TO HDMI
0xEF 0x05 0xD7 0xC0 0x22 0x0E 0xEE	CHANGE TO PC
0xEF 0x05 0xD7 0xC0 0x22 0x02 0xEE	CHANGE TO COMPOSITE
0xEF 0x05 0xD7 0xC0 0x22 0x0A 0xEE	CHANGE TO COMPONET

***Note:** *Optional TV Wall function.*

WH are the TV Option's Width and Height. W&H can be indicated from 1~9 & A~F where 11 means single panel's TV wall, 22 means 2x2's TV wall and so on up to FF is 15x15's TV wall setting.

7. CONNECTION DIAGRAM





Optional TV Wall Function



8. SPECIFICATIONS

SDI Transmission Rates	2.970 Gbps, 2.971/1.001 Gbps, 1.485 Gbps and 1.485/1.001 Gbps
Video Bandwidth	148 MHz
Input Ports	1×HDMI (Type A connector), 1×PC with Audio, 1×Component with R/L, 1×Composite with R/L
Output port	1×SDI (SD/HD/3G-SDI), 1×HDMI
SDI Cable Distance	3G/HD/SD up to 100/200/300 meters with BELDEN 1694A cable
HDMI Cable Distance	Input: 10 m, 8/12-bit Output: 10 m, 8/12-bit
Input HDMI Timing Support	VGA@60/72/75, SVGA@56/60/72/75, XGA@60/70/75, SXGA@60/75, WXGA@60, 480p@60, 576p@50, 720p@50/60, 1080i@50/60, 1080p@50/60
Input VGA Timing Support	VGA@60/72/75, SVGA@56/60/72/75, XGA@60/70/75, SXGA@60, WXGA@60, 1920×1080@60
Input Component Support	480i/p@60, 576i/p@50, 720p@50/60, 1080i/p@50/60
Input Composite Support	NTSC, PAL
Output Timing Support	HDMI: 720p@50/60, 1080p@50/60 SDI: SMPTE 292M (1.485 Gbit/s) & SMPTE 424M/425M (2.970 Gbit/s)
ESD Protection	Human-body Model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Dimensions	320 mm (W)×201mm (D)×49 mm (H)
Weight	1630 g
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 (no condensation)
Power Consumption	20.2W

9. ACRONYMS

ACRONYM	COMPLETE TERM
3G	Bandwidth 2.97Gbit/s ≈3G
COMP	Component
CV	Composite Video
HDMI	High-Definition Multimedia Interface
SDI	Serial Digital Interface
VGA	Video Graphics Array



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