



CSDI-12SR

1 by 2 SDI to SDI Scaler



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
V1	11/12/13	Preliminary Release

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1. INTRODUCTION

The 1 by 2 SDI to SDI Scaler allows SD, HD, 3G-SDI signals to be shown on SDI display. It is easier for professional to distribute and extend their SDI signal. Through the front panel, the user can easy to bring up the OSD (On Screen Display) to select benefits settings.

2. APPLICATIONS

- Distribute and extend SDI signal to SDI displays
- Scale any SDI input timing to any SDI output timing follow by SDI standard

3. PACKAGE CONTENTS

- 1 by 2 SDI to SDI Scaler box
- 5V/2.6A DC power adaptor
- Operation Manual

4. SYSTEM REQUIREMENTS

Input source equipment such as SNG camera or any SDI signal with SDI connection cable and output to the SDI monitors with SDI connection cables.

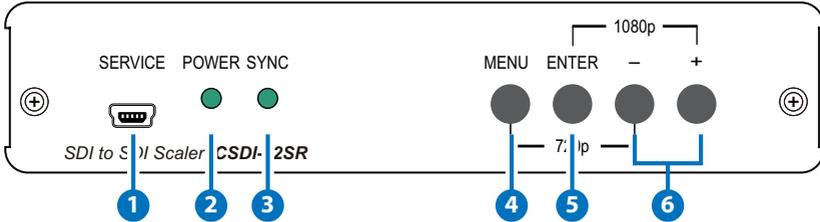
5. FEATURES

- One SDI input to two SDI outputs with scaler functions
- Supports SD-SDI, HD-SDI and 3G-SDI input/output signals with auto-detection
- SDI interface operates at bitrates of 2.970Gbps, 2.970/1.001Gbps, 1.485Gbps, 1.485/1.001Gbps and 270Mbps
- Scale any SDI input signals to any SDI output signals follow by SDI standard
- Supports SDI input/output modes:
 1. SD-SDI (SMPTE 259M-C, at bitrates of 270Mbps)
 2. HD-SDI (SMPTE 292M, at bitrates of 1.485Gbps and 1.485/1.001Gbps)
 3. 3G-SDI (SMPTE 424M/425M-AB, at bitrates of 2.970Gbps and 2.970/1.001Gbps)
- The audio support up to 8 channels at 48kHz
- The SDI input/output distance up to 100 meters (3G-SDI), 200 meters (HD-SDI), or 300 meters (SD-SDI)

Note: Tested with Belden 1694A Cable. Operating distances may vary if used with cable of different specifications.

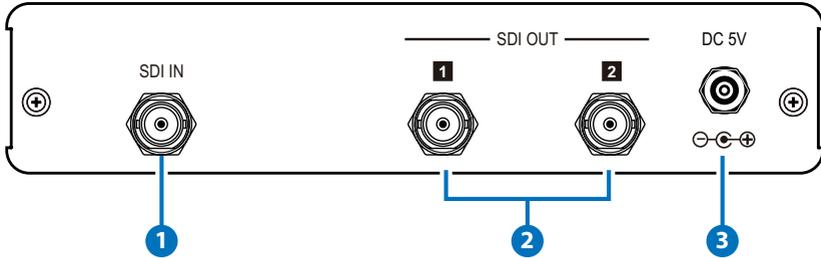
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



- 1 SERVICE:** This slot is to connect with mini USB B type cable for firmware update only.
- 2 Power LED indicator:** The power LED will illuminate when power is ON.
- 3 SYNC LED indicator:** The LED will illuminate when the SDI port is connected and detected to the input source.
- 4 MENU:**
 - Press this button to bring up the OSD menu. When in OSD menu mode, the "MENU" button will become to "EXIT" button.
 - Press "MENU" with "-" buttons to switch output timing to 720p@60Hz instantly.
 - This "MENU" button can be an ISP key for Firmware upgrade (please refer to 6.6 USB Firmware Update Procedure).
- 5 ENTER:**
 - Press to confirm the selection.
 - Press "ENTER" with "+" buttons to switch output timing to 1080p@60Hz instantly.
- 6 -/+:**
 - Press these buttons to move up or down the OSD selections.
 - When in normal display (without OSD), press "+" button to FREEZE the image (Please refer to the 6.3 OSD Menu and Function List).

6.2 Rear Panel



- 1 SDI IN:** Connect to the SDI output of the SDI source device.
- 2 SDI 1&2 OUT:** Connect to the SDI displays.
- 3 DC 5V:** Plug the 5V DC power supply into the unit and connect the adaptor to an AC outlet. The "POWER" LED will illuminate when power is ON.

6.3 OSD Menu and Function List

The OSD IN/OUT is showing the input/output timing, if the input did not connect to the source the input OSD will display "No Signal".

MAIN MENU	Sub Menu	Adjustments	Default
OUTPUT	480I59 , 576I50 , 720P50 , 720P59 , 720P60 , 1080P23 , 1080P24 , 1080P25 , 1080P29 , 1080P30 , 1080I50 , 1080P50 , 1080I59 , 1080P59 , 1080I60 , 1080P60		720P60
	EXIT		
PICTURE	CONTRAST	0 ~ 100	64
	BRIGHTNESS	0 ~ 100	64
	SATURATION	0 ~ 100	64
	HUE	0 ~ 100	64
	SHARPNESS	0 ~ 100	32
	PICTURE RESET		
	EXIT		
ASPECT RATIO (*1)	FULL		FULL
	16:9 TV		
	16:10 TV		
	4:3 TV		
	KEEP RATIO		
	EXIT		
OVERSCAN	ENABLE	YES , NO	NO
	H SIZE%	0% ~ 50%	0%
	V SIZE%	0% ~ 50%	0%
	EXIT		
AUDIO	ENABLE	YES , NO	YES
	SOURCE GROUP	1+2 , 3+4 , AUTO (*2)	AUTO
	EXIT		

OSD SETTINGS	POSITION	LEFT-TOP , RIGHT-TOP , RIGHT-BTM , LEFT-BTM , CENTER	LEFT-TOP
	TRANSPARENCY	0~15	12
	MENU TIMEOUT	5~50, OFF(*3)	20
	INFO. TIMEOUT	5~50, OFF	10
	INFO. DISPLAY	ON , OFF , INFO	INFO
	EXIT		
ADVANCED	AUTO SYNC-OFF(*4)	ON , OFF	OFF
	MIRROR-V	ON , OFF	OFF
	FREEZE(*5)	FREEZE ONLY, FREEZE+MUTE, MUTE ONLY	FREEZE+ MUTE
	EXIT		
PATTERN	OFF		OFF
	COLOR BAR		
	GRAY SCALE		
	CROSS HATCH		
	CROSS		
	WHITE WINDOW		
	RAMP		
	EXIT		
FACTORY DEFAULT	NO		NO
	YES		
	EXIT		
INFORMATION		IN , OUT , Audio group detection report, Firmware Version	
	EXIT		
EXIT			



NOTE:

***1 ASPECT RATIO:**

- ✓ **FULL** - Full fills the screen.
- ✓ **16:9 TV, 16:10TV, 4:3TV** – Select the corrected Aspect ratio to match the display.
- ✓ **KEEP RATIO:** The ratio will depend on the output timing. For example: The output timing is 1080p@60Hz (16:9) and display is 4:3, then the image will become Letter box (black bars above and below it).

***2 SOURCE GROUP:** From OSD menu to select 4 groups of audio source (Group1+2/3+4 or Auto detection), the maximum audio output is 8 channels.

- ✓ **1+2:** Group 1 is Primary, Group 2 is Secondary.
- ✓ **3+4:** Group 3 is Primary, Group 4 is Secondary
- ✓ **AUTO:** Primary > Secondary, Group 1 > 2 > 3 > 4.

***3 MENU TIMEOUT:** When MENU TIMEOUT is OFF, the MENU/INFO screen will stand still on the display.

***4 AUTO SYNC-OFF:** When the output displays been disconnected for 2 minutes the system will automatically switch off the SYNC output.

***5 FREEZE:** When freeze is ON, either source change timing or no source input, the video always freeze. Unless changed output timing. The system did not support last memory functions, when reboot the system the image still remain freeze.

- ✓ **FREEZE ONLY:** Video freeze and Audio is ON.
- ✓ **FREEZE+MUTE:** Video freeze and Audio mute.
- ✓ **MUTE ONLY:** Video is ON and Audio mute.

6.4 Input support timing table

Input timing	
SD-SDI	480i@59Hz
	576i@50Hz
HD-SDI	720p@50 / 59.94 / 60Hz
	1080i@50 / 59.94 / 60Hz
	1080p@23.98 / 24 / 25 / 29.97 / 30Hz
	1080sF@23.98 / 24 / 25 / 29.97 / 30Hz
3G-SDI	1080p@50 / 59.94 / 60Hz

NOTE:

- **When input source is 1080sF@23.98/24Hz, the output will not support 480i/576i and the OSD timing selection will become blank for those two timings.**
- **When the input source is 1080sF@25/29.97/30Hz, the OSD input timing will show 1080i@50/59.94/60Hz.**

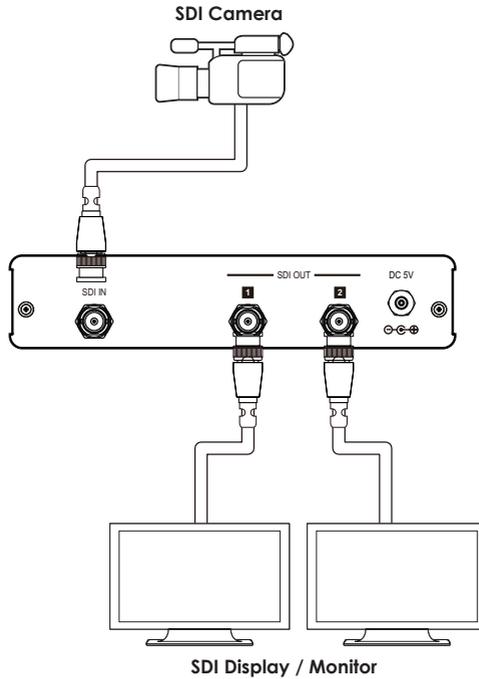
6.5 Output support timing table

Output timing	
SD-SDI	480i@59Hz
	576i@50Hz
HD-SDI	720p@50 / 59.94 / 60Hz
	1080i@50 / 59.94 / 60Hz
	1080p@23.98 / 24 / 25 / 29.97 / 30Hz
	3G-SDI
3G-SDI	1080p@50 / 59.94 / 60Hz

6.6 USB Firmware update procedure

1. Do not connect the 5V power to the unit.
2. Connect Mini-USB cable to the unit.
3. Press "MENU" button and connect 5V power to the system.
4. Wait for PC connection, after connected the file management will bring up automatically.
5. Release "MENU" button and then attached the BIN file to the file management.

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

SMPT E Standard	425M Level A & B, 424M, 292M, 259M-C
SDI Transmission Rates	2.970Gbps, 2.970/1.001Gbps, 1.485Gbps, 1.485/1.001Gbps and 270Mbps
Video Bandwidth	148.5MHz/link
Input port	1 x BNC(SDI/HD/3G-SDI)
Output ports	2 x BNC(SDI/HD/3G-SDI)
SDI Timing Support	SD-SDI: SMPTE 259M-C, 270Mbps HD-SDI: SMPTE 292M, 1.485 and 1.485/1.001Gbps 3G-SDI: SMPTE 424M/425M-AB, 2.970 and 2.970/1.001Gbps

SDI cable Distance	3G/HD/SD-SDI up to 100/200/300 meters with BELDEN 1694A Cable
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Power Supply	5VDC/2.6A (US/EU standards, CE/FCC/UL certified)
Dimensions	145(W) x 112.5(D) x 30(H)/Jacks Excluded 145(W) x 131(D) x 30(H)/Jacks Included
Weight	354
Chassis Material	Aluminum
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	N/W (Max)

9. ACRONYMS

ACRONYM	COMPLETE TERM
3G	Bandwidth 2.97Gbps~3G
SDI	Serial Digital Interface
HD	High Definition



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