

# **3G/HD/SD-SDI to HDMI & Audio Scaler Converter with Local Loopout**

**User Manual** 







The **CV-305S 3G/HD/SD-SDI to HDMI & Audio Scaler Converter with local loopout** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **CV-305S** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



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# INTRODUCTION

The **CV-305S 3G/HD/SD-SDI to HDMI & Audio Scaler Converter with local loopout** provides a cost effective way to convert 3G/HD/SD-SDI signal to HDMI compliant format. The conversion between SDI and HDMI is pure digital and guarantees no loss transformation for both audio and video. Plus, with up to 8 channels audio support, 7.1 channel or 5.1 channel audio becomes available. The CV-305S also provides 2 low jitter and re-clocked outputs for daisy chain or multiple monitors.

# FEATURES

- IR remote control
- Remote control via Mini-USB
- OSD control interface
- SDI loop-out
- Input bandwidth 2.970Gpbs
- Output maximum pixel rate : 165MHz
- Output video resolutions support multiple VESA standards
- Deinterlacer supported
- Supports nosie reduction and video enhancement features
- Over / Under scanning adjustable
- Video H/V mirror supported
- Active video area adjustment supported
- USB firmware upgradable for expanding compatibility
- Wall-mount housing design for easy installation

# PACKAGE CONTENTS

- 1x CV-305S
- 1x 5V/2A power supply unit
- 1x IR Remote control
- 1x User Manual
- 1x Installation software CD

# SPECIFICATIONS

Image: Product Produ	Model Name		CV-305S		
$ \begin{array}{                                    $	Technical				
Input Video bandwidth     2.970 Gbit/s, 2.970/1.001 Gbit/s       Input Video support     [3G] 1080p @50/59.94/60Hz, (42:2:) [HD] 720p @50/59.94/60Hz, 1080p @24/30Hz [SD] NTSC @59.94Hz, PAL @50Hz       Output Video Frequency bandwidth     165MHz       Audio support     PCM (48KHz only up to 8 channel)       ESD protection     [1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±2kV       PCB stack-up     4-layer board [impedance control — differential 100Ω; single 50Ω]       Firmware update     Feasible via USB Port       CEC Channel     N/A       Input     1x BNC [SD]       Output     1x BNC [SD]       Output     1x BNC [SD]       Output     1x HDMI + 1x BNC [SDI loop-out]       BNC connector     3G 75Ω inter-locked socket       HDMI connector     Type A [19-pin female]       USB connector     Model       Dimensions [L x D x H]     Model       Package     175 x 128 x 134mm [6.9" x 5" x 5.3"]       Queight     Model       Model     260g [9.10z]       Package     510g [17.90z]       Fixedness     Wall-mounting case with screws       Power soupl/vt	Role of usage	;	SDI to HDMI Converter		
Input Video support     [3G] 1080p @50/59.94/60Hz (4:2:2) [HD] 720p @50/59.94/60Hz, 1080p @24/30Hz [SD] NTSC @59.94Hz, PAL @50Hz       Output Video Frequency bandwidth     165MHz       Audio support     PCM (48KHz only up to 8 channel)       ESD protection     [1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±2kV       PCB stack-up     4-layer board [impedance control — differential 100Ω; single 50Ω]       Firmware update     Feasible via USB Port       CEC Channel     N/A       Input     ×       Qutput     1x HDMI + 1x BNC [SDI]       Output     1x HDMI + 1x BNC [SDI loop-out]       BNC connector     3G 75Ω inter-locked socket       HDMI connector     Type A [19-pin female]       USB connector     Model       Package     175 x 128 x 134mm [6.9" x 5" x 5.3"]       Housing     Metal enclosure       Package     175 x 128 x 134mm [6.9" x 5" x 5.3"]       Package     175 x 128 x 134mm [6.9" x 5" x 5.3"]       Qutput     Model     260g [9.102]       Package     510g [17.902]       Fixedness     Wall-mounting case with screws       Power supply     5VZA DC <t< td=""><td>SDI standards</td><td>3</td><td>SD-SDI, HD-SDI &amp; 3G-SDI</td></t<>	SDI standards	3	SD-SDI, HD-SDI & 3G-SDI		
Input Video suport     [HD] 720p @50/50.94/60Hz, 1080i @50/59.94/60Hz, 1080p @24/30Hz [SD] NTSC @59.94Hz, PAL @50Hz       Output Video     Feasop 244       Audio support     0       Audio support     944       PCB stack-up     [1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±2kV       PCB stack-up     4-layer board [impedance control — differential 100Ω; single 50Ω]       Firmware update     4-layer board [impedance control — differential 100Ω; single 50Ω]       Firmware update     94-layer board [impedance control — differential 100Ω; single 50Ω]       Firmware update     14       Output     94-layer board [impedance control — differential 100Ω; single 50Ω]       Output     14       Input     94-layer board [impedance control — differential 100Ω; single 50Ω]       Output     15       Note     14       Input     14       SD protection     N/A       Input     14       SD protection     15       SD protection     14       Input     15       SD protection     15       Model     92 x 83 x 28mm [3.6" x 3.3" x 1.1"]	Input Video ba	andwidth	2.970 Gbit/s, 2.970/1.001 Gbit/s		
bandwidth To SMIRZ   Audio support PCM (48KHz only up to 8 channel)   ESD protection [1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±2kV   PCB stack-up 4-layer board [impedance control — differential 100Ω; single 50Ω]   Firmware update 4-layer board [impedance control — differential 100Ω; single 50Ω]   Firmware update 94-layer board [impedance control — differential 100Ω; single 50Ω]   Firmware update N/A   Input 1x BNC [SDI]   Output 1x BNC [SDI]   Output 1x HDMI + 1x BNC [SDI loop-out]   BNC connector 3G 75Ω inter-locked socket   HDMI connector 40 (200 (300 (300 (300 (300 (300 (300 (30	Input Video si	upport	[HD] 720p @50/59.94/60Hz, 1080i @50/59.94/60Hz, 1080p @24/30Hz		
$\begin{array}{c c c c c } \medskip \label{eq:BSD} \medskip \medskip$	•	Frequency	165MHz		
ESD protection[2] Core chipset — ±2kVPCB stack-up4-layer board [impedance control — differential 100Ω; single 50Ω]Firmware updateFeasible via USB PortCEC ChannelN/AInput1x BNC [SDI]Output1x HDMI + 1x BNC [SDI loop-out]BNC connector3G 75Ω inter-locked socketHDMI connectorType A [19-pin female]USB connectorMechanicalOutputUSB connectorMedel92 x 83 x 28mm [3.6" x 3.3" x 1.1"]Dimensions [L x D x H]ModelPackage175 x 128 x 134mm [6.9" x 5" x 5.3"]Carton662 x 366 x 290mm [2'2" x 1'2" x 1']WeightModelPower supplySV2A DCPower consurbion5 Watts [max]Operation terror0-40°C [32-104°F]	Audio support	t	PCM (48KHz only up to 8 channel)		
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HDMI connectr   Type A [19-pin female]     USB connectr   Mini B     Mecharta   CV-305S     Housing   Metal enclosure     Dimensions [L × D × H]   Model   92 x 83 x 28mm [3.6" x 3.3" x 1.1"]     Package   175 x 128 x 134mm [6.9" x 5" x 5.3"]     Carton   662 x 366 x 290mm [2'2" x 1'2" x 1']     Weight   Model   260g [9.1oz]     Fixedness   Wall-mounting case with screws     Power supply   SV2A DC     Power consurtion   5 Watts [max]     Operation terver   0~40°C [32~104°F]	Output		1x HDMI + 1x BNC [SDI loop-out]		
USB connectorMini BMechanicalCV-305SHousingModel92 x 83 x 28mm [3.6" x 3.3" x 1.1"]Dimensions [L x D x H]Model92 x 83 x 28mm [3.6" x 3.3" x 1.1"]Package175 x 128 x 134mm [6.9" x 5" x 5.3"]Carton662 x 366 x 290mm [2'2" x 1'2" x 1']WeightModel260g [9.1oz]FixednessWall-mounting case with screwsPower supplySV2A DCPower consurption5 Watts [max]Operation terrer0~40°C [32~104°F]	BNC connected	or	3G 75Ω inter-locked socket		
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Dimensions [L x D x H]Model92 x 83 x 28mm [3.6" x 3.3" x 1.1"]Package175 x 128 x 134mm [6.9" x 5" x 5.3"]Carton662 x 366 x 290mm [2'2" x 1'2" x 1']WeightModel260g [9.1oz]Package510g [17.9oz]FixednessWall-mounting case with screwsPower supply5V2A DCPower consumption5 Watts [max]Operation temperature0~40°C [32~104°F]	Mecha	nical	CV-305S		
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Power consumption 5 Watts [max]   Operation temperature 0~40°C [32~104°F]	Fixedness		Wall-mounting case with screws		
Operation temperature 0~40°C [32~104°F]	Power supply		5V2A DC		
	Power consumption		5 Watts [max]		
Storage temperature -20~60°C [-4~140°F]	Operation temperature		0~40°C [32~104°F]		
			-20~60°C [-4~140°F]		
Relative humidity 20~90% RH [no condensation]			20~90% RH [no condensation]		

## PANEL DESCRIPTION

### **Front Panel**



- 1. SDI LOCAL LOOPOUT: 3G/HD/SD-SDI local loopout
- 2. DIP SWITCH: For firmware update

ON [1]: firmware update mode

OFF [♣]: normal mode

#### 3. LED INDICATOR:

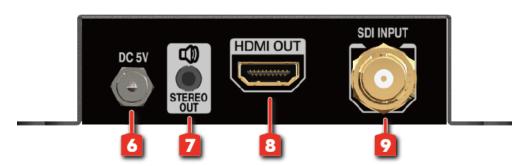
[green]: signal indicator LED [red]: power indicator LED.

4. IR SENSOR: IR sensor for receiving the IR commands from IR remote

#### 5. PUSH BUTTON

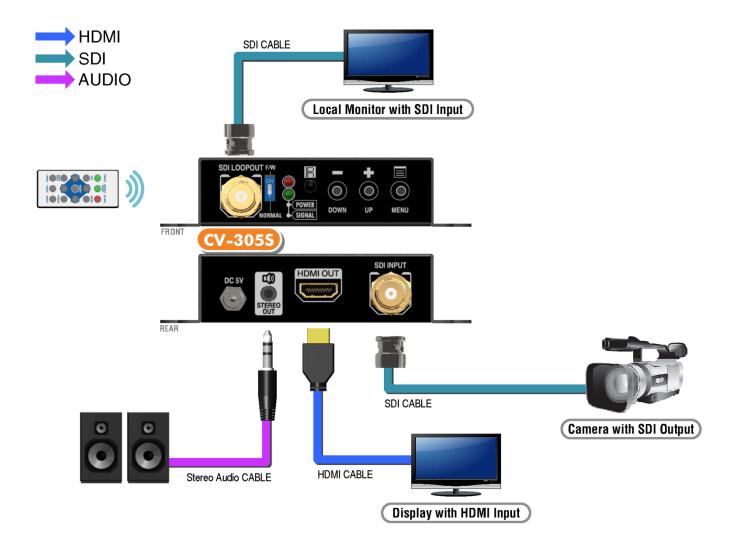
[LEFT]: Down Button [MID]: Up Botton [RIGHT]: Menu/Enter Button

### **Rear Panel**



- 6. +5V DC: Interlocking power jack for 5V DC power supply unit
- 7. STEREO AUDIO OUT: connect to analog stereo audio speaker
- 8. HDMI OUT: Connect to a HDMI display with a HDMI male-male cable here.
- 9. SDI IN: 3G/HD/SD-SDI Input

# **CONNECTION DIAGRAM**



# OSD MENU

	Out Res.	
1.Output Setup	Output Mode	RGB, YCbCr444, YCbCr422
	Default Pattern	Disable, White, Cross, Hatch, Color, Gray, Windows, H-Ramp, W-HRamp, W-VRamp, Diagonal
	Contrast	0~255 of Contrast Level
	Brightness	0~255 of Brightness Level
	Saturation	0~255 of Saturation Level
0.1	Hue	0~255 of Hue Level
2.Image	B/W Extension	Off, On
	Color Tone	Off, Skin, Green
	Edge Enhance	Typ, Mid, Max, Off
	Sharpness	0~127 of Sharpness Level
	Under/Over Scan	-50%~50% of Scan Level
	Aspect Ratio	16:9, 4:3
3.Adjustment	H-Mirror	Off, On
J.Adjustment	V-Mirror	Off, On
	H-Shift	-100~100 of H-Shift Level
	V-Shift	-50~50 of V-Shift Level
	Input Res. Info	
4. System	Firmware Version	
	Factory Reset	

# **OPERATION APPROACH**

### Method A: Push-in Button



### Method B: IR Remote Control

Button	Function	
FREEZE	Freeze video	
ASPECT RATIO	Aspect ratio change	FREEZE ASPECT BLANK
BLANK	Blank video	
EXIT	Exit OSD	
ENTER	Enter key	EXIT ENTER
UP	Up key	
LEFT	Left key	MENU
RIGHT	Right key	
DOWN	Down key	
MENU	Menu on	
INPUT INFO	Source resolution information	
1080p60	Select 1080p60 output resolution	INPUT 1080p60
1080i60	Select 1080i60 output resolution	
720p60	Select 720p60 output resolution	1080i60 720p60 480p60
480p60	Select 480p60 output resolution	

### Method C: IR Remote Control through Mini-USB port

FirmwareWriter	_ <b>□</b> ×
	COM PORT 1 2 V C
3 Output Setup 4 Image	5 Adjustment 6 System
Resolution Info 7   INPUT PORT Resolution	Output Quick Selection 9
Please click refresh button       OUTPUT PORT     Resolution	Aspect Ratio Freeze Blank
Please click refresh button	1080p60 1080i60 720p60 480p60
Refresh 8	40000

1	COM Port Selection
2	COM Port Detection Button
3	Output Setup Button
4	Image Button
5	Adjustment Button
6	System Button
7	Input / Output Resolution Info
8	Refresh Input / Output Resolution Info Button
9	Output Quick Selection Button

### 1. COM Port Selection

Please select the application COM PORT

G

COM PORT	
COM 1	-)
COM 1	
COM 0	

#### 2. COM Port Detection Button

Click this button

to detect the COM PORT

## 3. Output Setup Button

Output Setup			x
Output Resolution	HD(720p)60	•	Apply
Output Mode	RGB(24Bit)	•	Apply
Default Pattern	Disable	•	Apply

#### 4. Image Button

Image			x
Contrast (0~255)	<	> 128	Apply
Brightness (0~255)	<	> 128	Apply
Saturation (0~255)	<	> 128	Apply
Hue (0~255)	<	> 128	Apply
B/W Extension	Off	•	Apply
Color Tone	Off	•	Apply
Edge Enhance	Тур	•	Apply
Sharpness (0~127)	<	> 0	Apply

### 5. Adjustment Button

Adjustment					×
Under/Over Sca	n -50%~50%	<	-0	> 0	Apply
Aspect Ratio	16:9	•			Apply
H-Mirror	Off	•			Apply
V-Mirror	Off	•			Apply
Input H adj (0~	200)	< -		- > 0	Apply
Input V adj (0~	100)	<		> 0	Apply

#### 6. System Button

System	×
In-Sync Info: 1024x768p75 Firmware Version: V1.001 Factory Reset Firmware Update	Get

- In-Sync Info: To view the current input resolution
- 2) Factory Reset Button
- 3) Firmware Update Button

Firmware Update	X
Load File Burn Cancel File Size:	
The steps of firmware update. 1.Unplug Mini-USB connector from device 2.Set the Dip Switch to ON [up] 3.Connect the device to PC via USB to mini-USB cable 4.Click "Load File" button to select the FW file 5.Click "Burn" button to start the FW update process 6.Unplug Mini-USB connector from device 7.Set the Dip Switch to OFF [down] 8.Completed FW update process	4

The steps of firmware update:

- a) Unplug Mini-USB connector from device
- b) Set the Dip Switch to ON [1]
- c) Connect the device to PC via USB to mini-USB cable
- d) Click the FW Update button on software
- e) Click "Load File" button to select the FW file
- f) Click "Burn" button to start the FW update process
- g) Unplug Mini-USB connector from device
- h) Set the Dip Switch to OFF [♣]
- i) Completed FW update process

#### 7. I/O Port and Resolution Info

To display the information about the I/O Port and the applied Resolution

#### 8. Refresh Button

To refresh the status of the converter

#### 9. Output Quick Selection Button

Common functions for quick setting

## LIMITED WARRANTY

The SELLER warrants the **CV-305S 3G/HD/SD-SDI to HDMI & Audio Scaler Converter with local loopout** to be free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surges.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables are limited to a 30 day warranty and cable must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. Also, the technical information contained herein regarding the CV-305S features and specifications is subject to change without further notice.

