

# CV-53A

## HDMI to 3G/HD/SD-SDI Converter with Audio Embedder

### User Manual



**3G-HD-SD HDMI™**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

Full HD  
1080

7.1 CH  
AUDIO

 x.v.Color



rev: 180712  
Made in Taiwan



## Safety and Notice

The **CV-53A HDMI to 3G/HD/SD-SDI Converter with Audio Embedder** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment, the **CV-53A** 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-53A HDMI to 3G/HD/SD-SDI Converter with audio embedder** provides a professional way to convert HDMI to 3G/HD/SD SDI in real time. 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-53A provides one low jitter SDI output and to provide more flexible application possibility, and CV-53A is also equipped with high quality analog stereo embedder. With the use of CV-53A, the most popular uncompressed video interface in the consumer world is readily available for professional SDI equipment!

## FEATURES

- Supported high-definition (HD) formats:  
NTSC 525@59.94, PAL 625@50, 720p@50, 720p@59.94, 720p@60, 1080i@50, 1080i@59.94, 1080i@60, 1080p@23.97, 1080p@24, 1080p@25, 1080p@29.97, 1080p@30, 1080p@50, 1080p@59.94, 1080p@60  
Bit Rate: 2.97 Gbps, 2.967 Gbps, 1.485 Gbps, 1.4835 Gbps, 270 Mbps
- Auto 3G/HD/SD-SDI detection
- Supports HDMI Deep Color conversion
- Supports analog stereo embedder
- One SDI compliant output and one HDMI compliant output

## PACKAGE CONTENTS

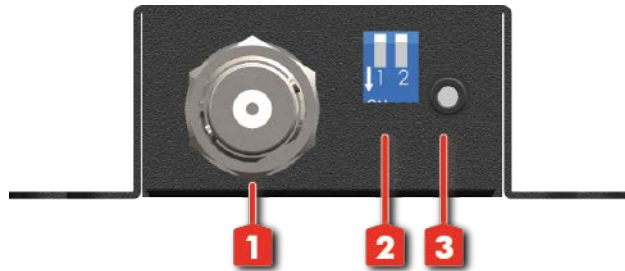
- 1x CV-53A
- 1x 5V/2A power adapter
- 1x User Manual

# SPECIFICATIONS

Model Name	CV-53A
<b>Technical</b>	
SDI standards	3G-SDI & HD-SDI & SD-SDI
HDMI standards	HDMI 1.3
Auto 3G/HD/SD-SDI detection	Yes
Video bandwidth	[SDI][2.97Gpbs & 2.975/1.001Gpbs] [HDMI] [6.75Gpbs]
Video support	[3G] 1080p50/59.94/60 (4:2:2) [HD] – 720p @50/59.94/60Hz, 1080i @50/59.94/60Hz, 1080p @23.98/24/25/29.97/30Hz [SD] – NTSC @59.94Hz, PAL @50Hz [HDMI ] up to 1080p60
Input signal	1x HDMI + 1x 3.5mm(Audio)
Output signal	1x SDI
Output impedance(SDI)	75Ω
Synchronization mode	Internal synchronization or external synchronization
Eye pattern characteristics	Extra low alignment jitter 0.05UI at HD
Cable equalization	[3G-SDI] up to 90m (300ft) [HD-SDI] up to 150m (500ft) [SD-SDI] up to 300m (1000ft)
Audio embedder support	Support 2ch (48KHz, 24BIT ADC)
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]
Input	1x HDMI + 1 x 3.5mm
Output	1x BNC [SDI]
BNC connector	75Ω inter-locked socket
HDMI connector	Type A [19-pin female]
<b>Mechanical</b>	
Housing	
Dimensions [L x W x H]	Model 92 x 84 x 23mm[3.7" x 3.3" x 0.9" ]
	Package 198 x 137 x 74mm [7.8" x 5.4" x 2.9"]
	Carton 420 x 400 x 300mm [1'4"x 1'3" x 11.8"]
Weight	Model 198g[7 oz]
	Package 413g[14.6 oz]
Power supply	5V 2A DC
Power consumption	2.5 Watts [max]
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]

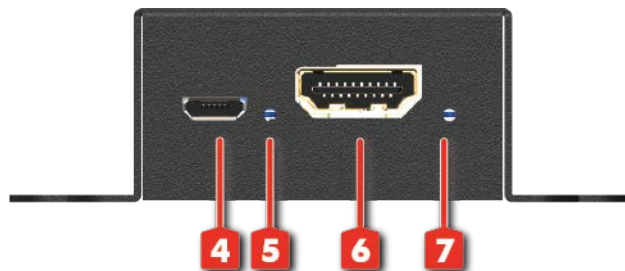
# PANEL DESCRIPTION

## Front Panel



1. **SDI OUT:** 3G/HD/SD-SDI output
2. **2-Pin Dip Switch** (Please refer to “Notes”)
3. **Stereo Audio Input**

## Rear Panel

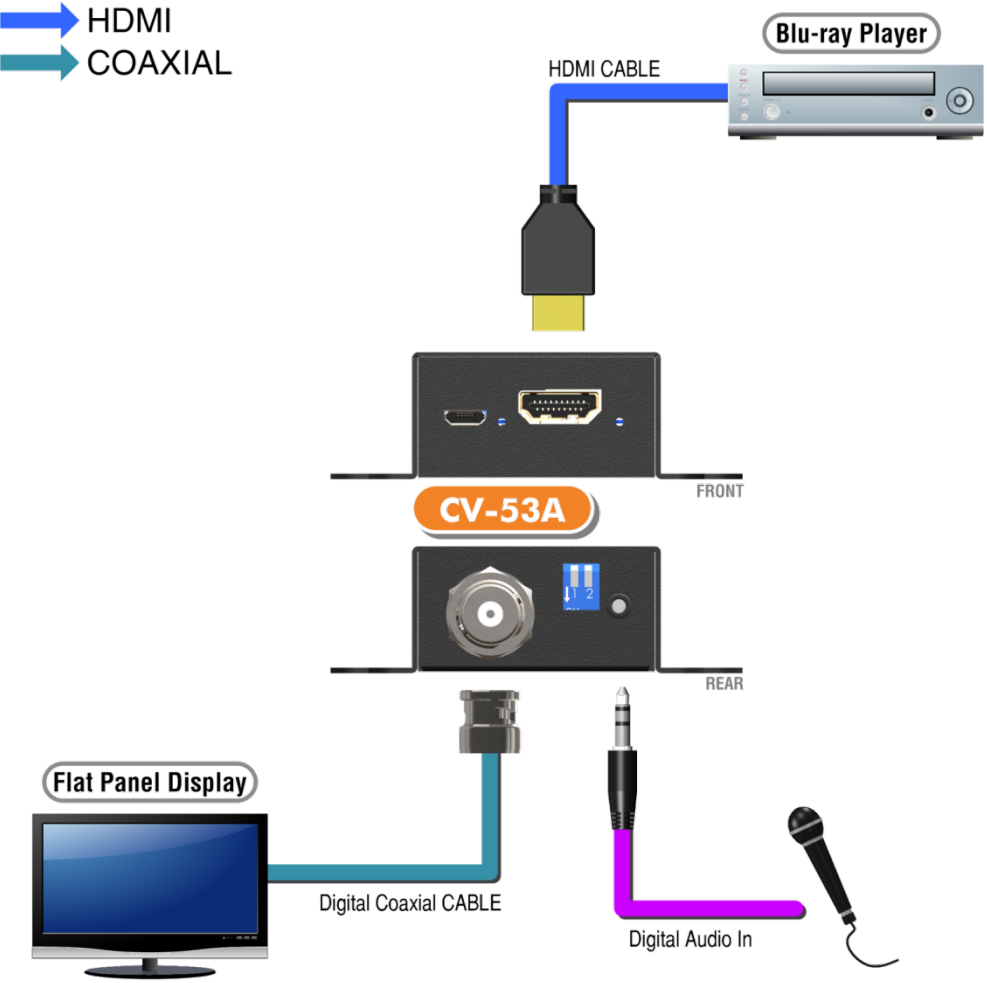


4. **+5V DC:** Connect to a 5V DC power supply
5. **LED:** Power LED indicator
6. **HDMI IN:** Connects to a HDMI source with a HDMI male-male cable
7. **LED:** Signal LED indicator

### \*Notes: DIP Switch Position

DIP Switch Position		Description
2-Pin		
PIN#1	ON [↓]	<i>Stereo Audio Embedder Function(2ch)</i>
	OFF [↑]	<i>HDMI Audio Bypass(up to 7.1ch)</i>
PIN#2	ON [↓]	<i>Reserved</i>
	OFF [↑]	<i>Reserved</i>

# CONNECTION DIAGRAM



# SUPPORTED RESOLUTIONS

3G-SDI Output	
1080p @ 50/ 59.94 / 60Hz	SMPTE 424M, SMPTE 425M
HD-SDI Output	
720p @ 50Hz	SMPTE 296M -3
720p @ 60 / 59.94Hz	SMPTE 296M -1, -2
1080i @ 50Hz	SMPTE 274M -6
1080i @ 60 / 59.94Hz	SMPTE 274M -4, -5
1080p @ 24 / 23.98Hz	SMPTE 274M -10, -11
1080p @ 25Hz	SMPTE 274M -9
1080p @ 30 / 29.97Hz	SMPTE 274M -7, -8
SD-SDI Output	
NTSC	
PAL B,D,G,H,I	

# WARRANTY

The SELLER warrants the **CV-53A HDMI to 3G/HD/SD-SDI Converter with Audio Embedder** 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-53A features and specifications is subject to change without further notice.**



# SIGNAL MEASUREMENT

