

CV-53BI

3G/HD/SD-SDI and HDMI Bi-directional
Converter with Audio Embedder &
Extractor

User Manual



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



Full HD
1080

7.1 CH
AUDIO

 x.v.Color

rev: 180704
Made in Taiwan



Safety and Notice

The **CV-53BI 3G/HD/SD-SDI and HDMI Bi-directional Converter with Audio Embedder & Extractor** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **CV-53BI** 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-53BI 3G/HD/SD-SDI and HDMI Bi-directional Converter with Audio Embedder & Extractor** provides a professional way to convert HDMI to 3G/HD/SD SDI & 3G/HD/SD-SDI to HDMI 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-53BI also provides one low jitter SDI output and to provide more flexible application possibility, CV-53BI is also equipped with high quality analog stereo embedder & extractor. With the use of CV-53BI, 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
- Support HDMI Deep Color
- Supports analog stereo embedder & extractor
- One SDI compliant output and one HDMI compliant output

PACKAGE CONTENTS

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

SPECIFICATIONS

Model Name		CV-53BI
Technical		
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 SDI + 1x HDMI + 1x Audio	
Output signal	1x HDMI + 1x SDI + 1x Audio	
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 support	Yes	
PCB stack-up	6-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	1x BNC [SDI] + 1x HDMI + 1x Audio Jack	
Output	1x HDMI + 1x BNC [SDI] + 1x Audio Jack	
BNC connector	75Ω inter-locked socket	
HDMI connector	Type A [19-pin female]	
DIP switch	4-pin [1 pin for EDID use, 2 pin for Audio use]	
Mechanical		
Housing		
Dimensions [L x W x H]	Model	114 x 108 x 26mm[4.5" x 4.3" x 1"]
	Package	264 x 170 x 77mm[10.3" x 6.7" x 3"]
	Carton	430 x 358 x 291mm[1'4" x 1'2" x 11.5"]
Weight	Model	212g[7.5 oz]
	Package	506g[1.1 lbs]
Power supply	5V 2A DC	
Power consumption	6 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]	

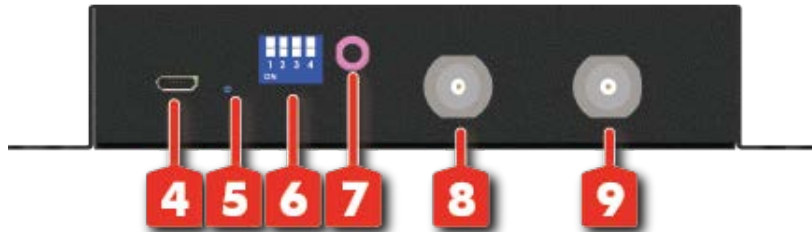
PANEL DESCRIPTION

Front Panel



1. **HDMI IN:** Connects to a HDMI source with a HDMI male-male cable
2. **HDMI OUT:** Connect to a HDMI display with a HDMI male-male cable here.
3. **Stereo Audio Output** (Please refer to the “PIN#1 of Notes”)

Rear Panel



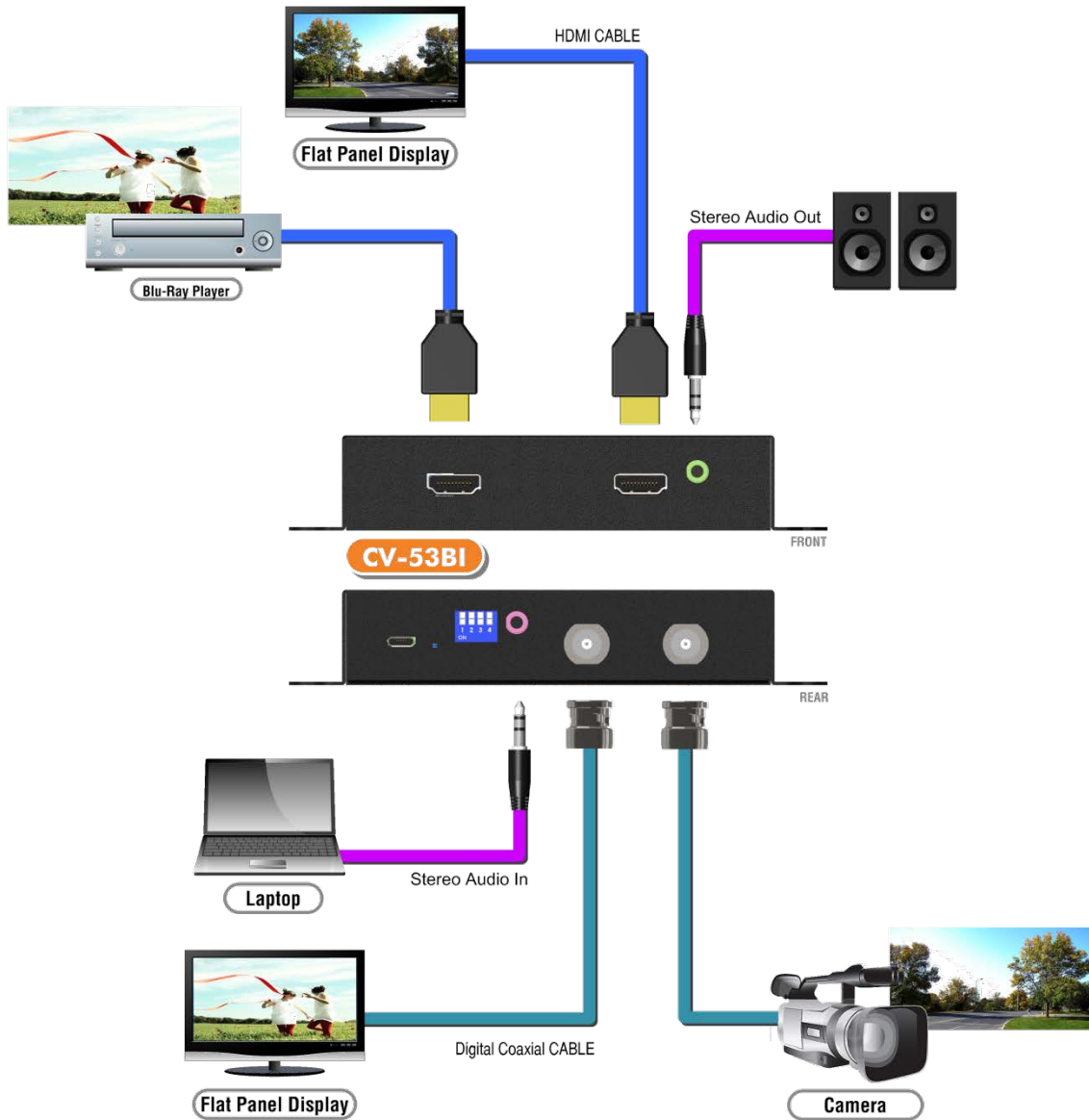
4. **+5V DC:** Connect to a 5V DC power supply.
5. **LED:** Power LED indicator
6. **4-Pin Dip Switch** (Please refer to “Notes”)
7. **Stereo Audio Input** (Please refer to the “PIN#2 of Notes”)
8. **SDI OUT:** 3G/HD/SD-SDI output
9. **SDI IN:** 3G/HD/SD-SDI input

*Notes: DIP Switch Position

DIP Switch Position		Description
4-Pin		
PIN#1	ON [↓]	<i>Audio Extractor's Connector Selection - from BNC [SDI] Input</i>
	OFF [↑]	<i>Audio Extractor's Connector Selection - from HDMI Input</i>
PIN#2	ON [↓]	<i>Stereo Audio Embedder(2ch) to BNC[SDI] Output</i>
	OFF [↑]	<i>Disable Stereo Audio Embedder Function</i>
PIN#3	ON [↓]	<i>Reserved</i>
	OFF [↑]	<i>Reserved</i>
PIN#4	ON [↓]	<i>EDID-Full-HD(1080p@60) 2ch audio</i>
	OFF [↑]	<i>EDID-Full-HD(1080p@60) 7.1ch audio</i>

CONNECTION DIAGRAM

- ➔ HDMI
- ➔ COAXIAL
- ➔ AUDIO



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	

LIMITED WARRANTY

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

SIGNAL MEASUREMENT

