CP-255ID

Multi-Format to DVI 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
VR0	31/01/13	Preliminary Release
VS1	24/06/13	Updated Format and Diagrams

CONTENTS

1. INTRODUCTION

This Multi-Format to DVI Scaler is capable of scaling and source-switching from Composite Video, S-Video, PC (VGA) and DVI input signals to a DVI output. A corresponding analog stereo audio input can be switched and sent to the stereo audio output with the video source selection. It has the added benefit of control through front panel buttons, IR remote, or RS-232, and there is on-screen menu (OSD) providing setting selection and system information. The device provides a full range of output resolutions, up to 1080p for HDTV resolutions, and WUXGA (RB) for PC resolutions.

2. APPLICATIONS

- Analog to Digital video signal conversion
- Analog and Digital Source Integration
- Upscaling Standard definition video for High-Definition displays

3. PACKAGE CONTENTS

- Multi-Format to DVI Scaler
- Remote Control (CR-118)
- 5 V/2.6 A DC Power Adaptor
- Operation Manual

4. SYSTEM REQUIREMENTS

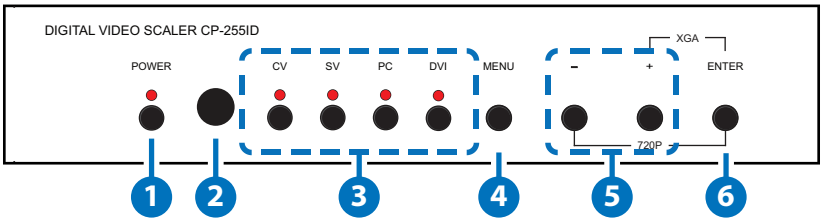
Source equipment such as PC/Laptop or DVD Player with HDMI to DVI adaptor, analog sources via standard cabling and DVI display with active speakers and connection cables.

5. FEATURES

- Supports the conversion of multiple video and audio formats to DVI
- Supports synchronized output for input video and output audio signals
- Supports 3D de-interlacing, noise reduction and Comb filter
- Supports frame rate conversion
- Supports control via RS-232, IR Remote handset and front panel

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



1 POWER and LED

Press this button to switch the device ON or to put the device into STANDBY mode. When the device is connected to an active power supply, the LED will illuminate and the device will switch ON automatically.

2 IR Window

Receives only the IR signal from the supplied remote control.

3 INPUT Buttons and LEDs

Press to directly select the required input. An LED will illuminate to indicate the currently selected source.

4 MENU

Press this button to enter into the on-screen menu (OSD).

5 –/+ (Minus/Plus)

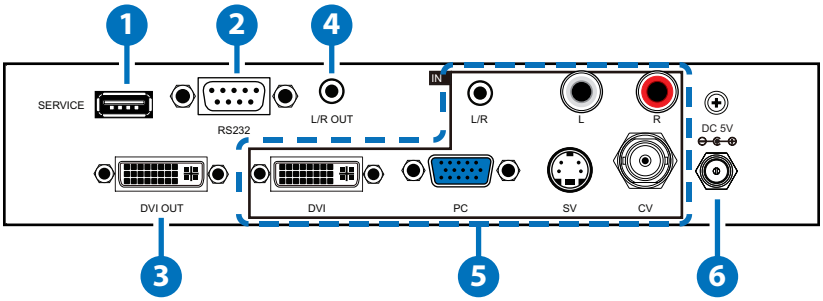
Use these buttons to navigate down and up in the on-screen menu.

6 ENTER

Press this button to confirm the selection.

Note: Pressing '–' (MINUS) and ENTER simultaneously will immediately switch the output resolution of the device to 720p60. Pressing '+' (PLUS) and ENTER simultaneously will immediately switch the output resolution of the device to XGA.

6.2 Rear Panel



1 SERVICE

Reserved for manufacturer use only.

2 RS-232

Connect to a PC or RS-232 control system to control the device with RS232 commands (see Sections 6.5).

3 DVI OUT

Connect to a DVI display (TV/monitor) for PC signal output or to an HDMI display with an HDMI to DVI adaptor.

4 L/R OUT (3.5mm Mini-jack)

Connect to an amplifier or active speaker for audio output in analog stereo with a 3.5mm Mini-jack cable.

5 INPUTS

DVI: Connect to DVI source such as PC or Laptop or to a HDMI source with a HDMI to DVI adaptor.

PC: Connect to a PC or Laptop with a D-sub 15-pin cable.

CV and L/R: Connect to a source device such as video/DVD player for both video and audio.

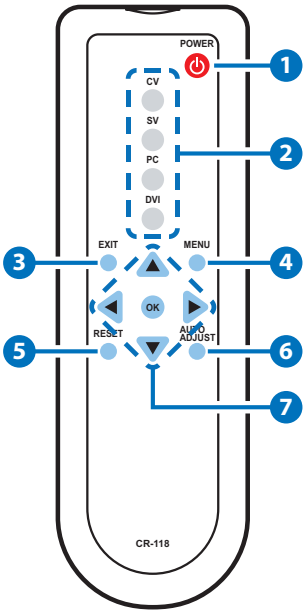
SV and L/R: Connect to a source device such as video/DVD player for both S-Video and audio.

L/R: Connect to a source device's analog (L/R) output with a 3.5mm Mini-jack cable.

6 DC 5V

Connect the 5V DC power supply to the device and plug the adaptor into an AC wall outlet.

6.3 Remote Control



1. **POWER**
   Press this button to switch the device ON or to put the device into STANDBY mode.
2. **CV/SV/PC/DVI**
   Press to directly select the required input.
3. **EXIT**
   Press this button to exit the menu or the current selection in the on-screen menu.
4. **MENU**
   Press this button to enter the on-screen menu.
5. **RESET**
   Press this button to return the device to the factory default settings.
6. **AUTO ADJUST**
   Press the button to optimize the positioning of the picture (picture centering) on the screen.
7. **▲▼◄► and OK**
   Press OK to confirm the selection or use the directional buttons to navigate the on-screen menus.

6.4 RS-232 Pin Assignment

MULTI-FORMAT TO DVI SCALER	
PIN	**Assignment**
1	NC
2	Tx
3	Rx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

▶
◀

REMOTE CONTROL	
PIN	**Assignment**
1	NC
2	Rx
3	Tx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

Baud Rate: 9600bps
Data bit: 8 bits
Parity: None
Flow Control: None
Stop Bit: 1

6.5 RS-232 Commands

COMMAND	DESCRIPTION	
S SOURCE 1~4	1=DVI 2=VIDEO	3=S-VIDEO 4=PC
R SOURCE	Reports the numerical equivalent for SOURCE setting (as above)	
S OUTPUT 0~25	0=Native 1=640×480 2=800×600 3=1024×768 4=1280×768 5=1360×768 6=1280×720 7=1280×800 8=1280×1024 9=1440×900 10=1400×1050 11=1680×1050	12=1600×1200 13=1920×1080 16=1920×1200 17=480p 18=720p@60 19=1080p@60 20=1080i@60 22=576p 23=720p@50 24=1080p@50 25=1080i@50
R OUTPUT	Reports the numerical equivalent for OUTPUT setting (as above)	
S SIZE 0~6	0=OVERSCAN 1=FULL 2=BEST FIT 3=PAN SCAN	4=LETTER BOX 5=UNDER 2 6=UNDER 1
R SIZE	Reports the numerical equivalent for SIZE setting (as above)	
S PC AUTO 1	Turn on (1) or off (0) the PC AUTO feature.	
S CONTRAST 0~60	Setups the numerical equivalent for CONTRAST setting (as left)	
R CONTRAST	Reports the numerical equivalent for CONTRAST setting	

COMMAND	DESCRIPTION
S BRIGHTNESS 0~60	Setups the numerical equivalent for BRIGHTNESS setting (as left)
R BRIGHTNESS	Reports the numerical equivalent for BRIGHTNESS setting
S HUE 0~60	Steups the numerical equivalent for HUE setting (as left)
R HUE	Reports the numerical equivalent for HUE setting
S SATURATION 0~60	Setups the numerical equivalent for SATURATION setting (as left)
R SATURATION	Reports the numerical equivalent for SATURATION setting
S SHARPNESS 0~30	Setups the numerical equivalent for SHARPNESS setting (as left)
R SHARPNESS	Reports the numerical equivalent for SHARPNESS setting
S NR 0~3	0=OFF 2=MIDDLE 1=LOW 3=HIGH
R NR	Reports the numerical equivalent for the NOISE REDUCTION setting (as above)
S AUDIO DELAY 0~3	0=OFF 2=110ms 1=40ms 3=150ms
R AUDIO DELAY	Reports the numeric equivalent for AUDIO DELAY setting (as above)
S AUDIO MUTE 0/1	0=ON 1=MUTE
R AUDIO MUTE	Reports the numeric equivalent for AUDIO MUTE setting (as above)
S KEY LOCK 0/1	0=ENABLE 1=DISABLE
R KEY LOCK	Reports the numeric equivalent for KEY LOCK setting (as above)
FW	Checks the FIRMWARE version

COMMAND	DESCRIPTION
S RESET 1	Setups the numerical equivalent for RESET setting (as left)
S POWER 0/1	0=OFF 1=ON
R POWER	Reports the numeric equivalent for POWER setting (as above)

Note: RS-232 commands will be not executed unless followed with a carriage return and LF. Commands are case-insensitive.

6.6 OSD Menu

MAIN MENU	SUBMENU	3RD MENU	4TH MENU
DISPLAY	OUTPUT	Native	
		640×480 60	
		800×600 60	
		1024×768 60	
		1360×768 60	
		1280×720 60	
		1280×800 60	
		1280×1024 60	
		1440×900 60	
		1400×1050 60	
		1680×1050 60	
		1600×1200 60	
		1920×1080 60	
		1920×1200 60	
		720×480P 60	
		1280×720P 60*	
		1920×1080I 60	
		1920×1080P 60	
		720×576P 50	
		1280×720P 50	
		1920×1080I 50	
		1920×1080P 50	

MAIN MENU	SUBMENU	3RD MENU	4TH MENU
DISPLAY	SIZE (For VIDEO input)	OVER SCAN	
		FULL*	
		BEST FIT	
		PAN SCAN	
		LETTER BOX	
	SIZE (For VIDEO input)	UNDER 2	
		UNDER 1	
	MODE INFO	INFO*	
		ON	
		OFF	
	PC (For PC input)	AUTO SETUP	No
			YES
		H_POSITION	0~60 (30)
		V_POSITION	0~60 (30)
		PHASE	
		CLOCK	
		WXGA/XGA	XGA*
			WXGA
		RESET	NO
			YES

MAIN MENU	SUBMENU	3RD MENU	4TH MENU
COLOR	COLOR	R	0~1023 (512)
		G	0~1023 (512)
		B	0~1023 (512)
		R OFFSET	0~1023 (512)
		G OFFSET	0~1023 (512)
		B OFFSET	0~1023 (512)
	CONTRAST	0~60 (30)	
	BRIGHTNESS	0~60 (30)	
	HUE (For VIDEO input)	0~60 (30)	
	SATURATION (For VIDEO input)	0~60 (30)	
	SHARPNESS (For VIDEO input)	0~30 (0)	
	NR. (For VIDEO input)	OFF*	
		LOW	
		MIDDLE	
		HIGH	
AUDIO	VOLUME	0~100	
	DELAY (For L/R output)	OFF*	
		40 ms	
		110 ms	
		150 ms	
	SOUND	ON*	
		MUTE	

MAIN MENU	SUBMENU	3RD MENU	4TH MENU
SETUP	FACTORY RESET	NO*	
		YES	
	KEY LOCK	OFF*	
		ON	
	POWER SAVE	OFF*	
		ON	
INFORMATION	INPUT		
	OUTPUT		
	REVISION		

Note:

- *Items with Asterisk (*) are the Factory default settings.*
- *Items in brackets are the default values for those settings*

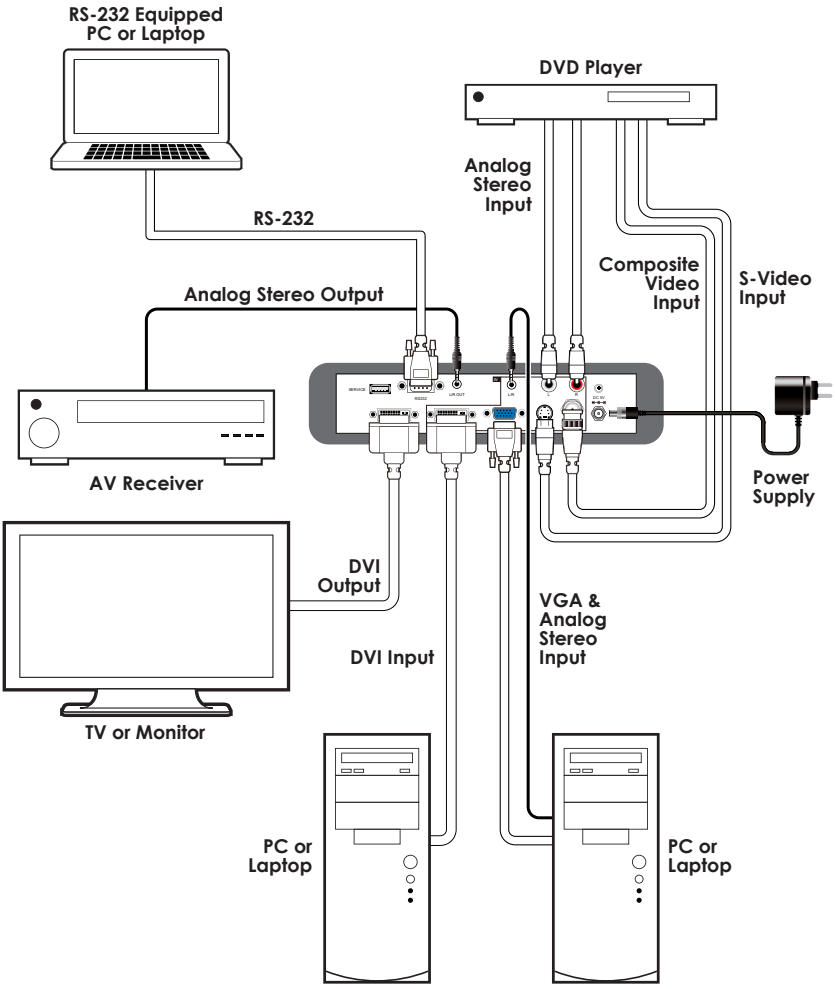
6.7 Input Resolution Support

INPUT RESOLUTION	PC	DVI/HDMI	CV/SV
NTSC	-	-	✓
PAL	-	-	✓
640×480@60/72/75 Hz (VGA)	✓	✓	-
800×600@56/60/72/75 Hz (SVGA)	✓	✓	-
1024×768@60/70/75 Hz (XGA)	✓	✓	-
152×864 @75 Hz (XGA+)	✓	✓	-
1280×720@60 Hz	✓	✓	-
1280×768@60 Hz	✓	✓	-
1280×800@60 Hz	✓	✓	-
1280×960@60 Hz	✓	✓	-
1280×1024@60/75 Hz	✓	✓	-
1360×768@60 Hz	✓	✓	-
1400×1050@60 Hz (SXGA+)	✓	✓	-
1440×900@60 Hz (WXGA+)	✓	✓	-
1600×1200@60 Hz (UXGA)	✓	✓	-
1680×1050@60 Hz (RB) (WUXGA)	✓	✓	-
1920×1080@60 Hz	✓	✓	-
1920×1200@60 Hz (RB)	✓	✓	-
480i/576i	-	✓	-
480p/576p	-	✓	-
720p@50/60 Hz	-	✓	-
1080i@50/60 Hz	-	✓	-
1080p@24/30/50/60 Hz	-	✓	-

6.8 Output Resolution Support

OUTPUT RESOLUTION	DVI/HDMI
Native	✓
640×480@60 Hz	✓
800×600@60 Hz	✓
1024×768@60 Hz	✓
1360×768@60 Hz	✓
1280×720@60 Hz	✓
1280×800@60 Hz	✓
1280×1024@60 Hz	✓
1440×900@60 Hz	✓
1400×1050@60 Hz	✓
1680×1050@60 Hz	✓
1600×1200@60 Hz	✓
1920×1080@60 Hz	✓
1920×1200@60 Hz	✓
480p	✓
576p	✓
720p@50/60 Hz	✓
1080i@50/60 Hz	✓
1080p@50/60 Hz	✓

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

Video Bandwidth	165 MHz
Input Ports	1×DVI, 1×VGA, 1×S-Video, 1×Composite Video, 1×Analog Stereo (L/R), 1×3.5mm Mini-jack, 1×RS-232, 1×USB (Service Only)
Output Ports	1×DVI, 1×3.5mm Mini-jack
Input Resolution Support	Up to 1080p & WUXGA (RB)
Output Resolution Support	Up to 1080p & WUXGA (RB)
Power Supply	5 V/2.6 A DC (US/EU standards, CE/FCC/ UL certified)
Dimensions	215 mm (W)×165 mm(D)×47 mm (H)
Weight	970 g
Chassis Material	Metal
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	5.7 W

9. ACRONYMS

ACRONYM	COMPLETE TERM
COMP	Component Video
CV	Composite Video
DVI	Digital Visual Interface
HDMI	High-Definition Multimedia Interface
IR	Infrared
NR	Noise Reduction
NTSC	National Television System Committee
OSD	On-screen Display (Menu)
PAL	Phase Alternating Line
RGB	Red Green Blue
SDI	Serial Digital Interface
SV	S-Video
USB	Universal Serial Bus
UXGA	Ultra Extended Graphics Array
VGA	Video Graphics Array
XGA	Extended Graphics Array
WUXGA	Wide Ultra Extended Graphics Array

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