

CPRO-41W

HDMI 4 by 1 v1.4 Switcher

Operation Manual



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• **Safety Precautions**

Please read all instructions before attempting to unpack or 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 module openings or empty slots, as you may damage parts.
- Do not attach the power supply cabling to building surfaces.
- Do not allow anything to rest on the power cabling or allow it to be abused by persons walking on it.
- To protect the equipment from overheating, do not block the slots and openings in the module housing that provide

• **Revision History**

<u>Version No</u>	<u>Date</u>	<u>Summary of Change</u>
V1	20100407	Preliminary Release

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1. Introduction

This is a high performance four-input & one-output HDMI v1.4 switcher with digital audio inputs and outputs. It supports an HDCP repeater function and fast switching between any of the four HDMI input ports. The system supports all 3D TV formats in addition to all HDTV formats up to 1080p 12-bit Deep Color. Furthermore, the remote control allows every user to easily control selection of sources and its wall mounted design, the installation is an easy and pain free process.

2. Applications

- Display 3D content
- Display HDMI v1.4 content
- Electronic retail display

3. Package Contents

- HDMI v1.4 3D 4 in 1 out switcher
- Remote Control
- 5V 1A power adaptor
- Operation manual

4. System Requirements

Input source equipment with or without 3D content and HDMI connection cables.
Output HDTV's with or without 3D support and HDMI connection cables.

5. Features

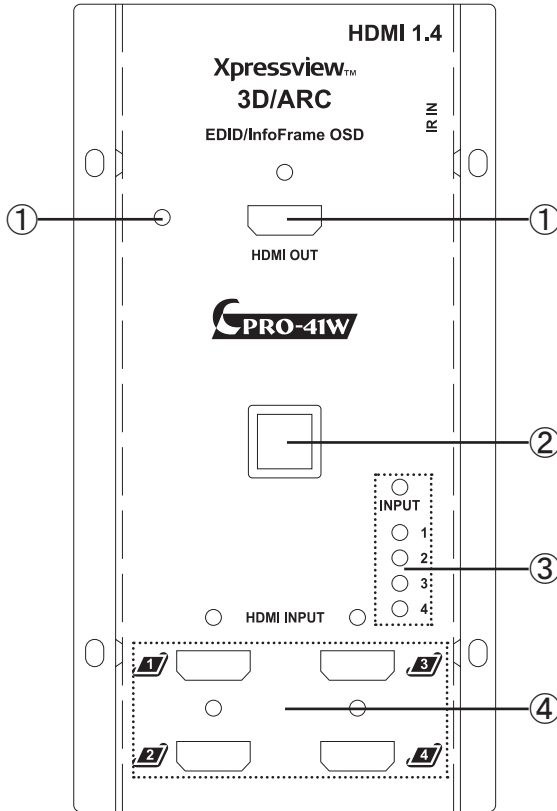
- Support multiplexed HDMI 4-input and 1-output
- HDMI 1.4, HDCP 1.4 and CEC1.4 compliant
- HDMI 1.4 support:
 - ✓ Audio Return Channel (ARC)
 - ✓ 3D TV support
 - ✓ CEC1.4
- Fast switching on all HDMI input ports
- Character and icon based On-Screen Display (OSD)
 - ✓ System information for Software version
 - ✓ Sink EDID
 - ✓ Source infoframe
 - ✓ HDMI input Audio & Audio Return selection
- HDCP repeater support
- Deep Color support 36/30/24-bit, 1080p@60Hz
- HDMI cable distance tested with 1080p 8/12 bits resolution, the input & output distance can run up to 10 & 15 meters.
- Audio support:
 - ✓ HDMI 1.4 compatible audio interface
 - ✓ Dedicated, flexible audio input/output port
 - ✓ Dolby TrueHD
 - ✓ DTS-HD Master Audio 7.1CH
 - ✓ Full audio input and output support

6. Specifications

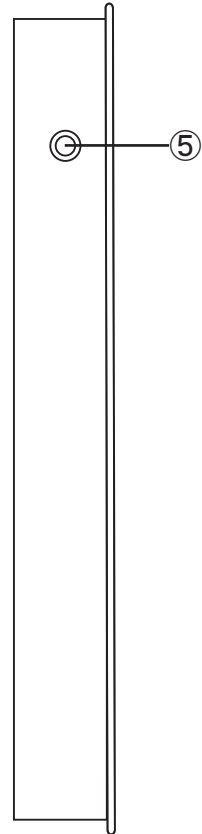
Frequency Bandwidth	2.25Gbps
Input Ports	4 x HDMI Female ports
Output port	1 x HDMI Female port
HDMI Output Resolution	480i ~1080p 50/60, 1080p24, VGA~WUXGA
HDMI Audio Output	PCM2, 5.1, 7.1CH, Dolby 5.1, DTS5.1, DD+, D-TrueHD, DTS-HD
HDMI Cable In	1080p 8-bit (10M), 12-bit (10M)
HDMI Cable Out	1080p 8-bit (15M), 12-bit (15M)
Coaxial Audio Output	PCM2CH
Power Supply	5V/1A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human Body Model: $\pm 8\text{kV}$ (air-gap discharge) $\pm 4\text{kV}$ (contact discharge)
Dimensions (mm)	100 (W) x 70 (D) x 20 (H)
Weight (g)	90
Chassis Material	Plastic
Silkscreen Color	White
Power Consumption	4W
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Relative Humidity	20~60% RH (non-condensing)

7. Operation Controls and Functions

7.1 Front Panel



7.2 Site Panel

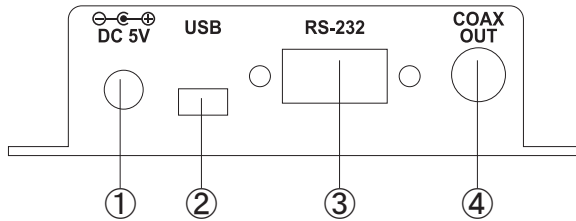


- ① POWER LED: The LED will turn on when the power device is plugged in with power.
- ① HDMI OUTPUT: This slot is where you connect an HDTV or HD display that supports or doesn't support 3D signals for displaying an input signal with a HDMI cable.
- ② IR sensor: This is an IR receiver window that receives IR signals from the remote control included in the package.
- ③ INPUT & LED: Press this button to select the desired input source, the LED will switch on according to the selection.
- ④ HDMI INPUT 1~3 & 4: These slots are where you connect the input source devices for sending an input signal with HDMI cables.
- ⑤ IR IN: This slot connects with the IR extender included in the package for receiving an IR signal from the remote control of this unit.

Note

- A. This system was tested with 24AWG cables if using cables of another type, the performance of this system may vary.
- B. Cable distance tested with a PS3 & 40" Samsung LED LCD TV.
- C. Figures provided in this manual are for reference only, actual figures may depend on the source and display used along with the cables specifications.

7.3 Top Panel



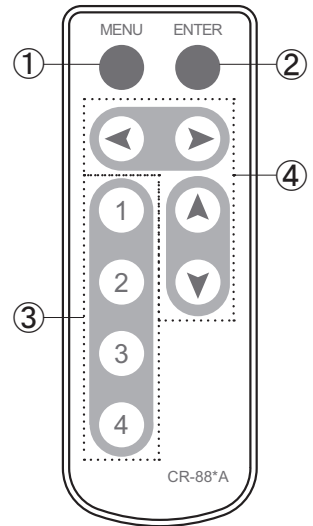
- ① DC 5V: Plug the 5V DC power supply into the unit and connect the adaptor to an AC outlet. The LED will switch on when the power cable is plugged in.
- ② USB 5V: This slot is where you can connect the mini USB cable from your PC to supply power.
- ③ RS-232: This slot is to connect with a PC or control system with D-Sub 9pin cable for RS-232 control. For detailed RS-232 commands please refer to section 9.
- ④ COAX OUT: This slot is where you connect an amplifier for sending an audio signal with coaxial cables. When audio return function is on the audio signal will be received from the output end and when the audio return function is OFF the audio signal will be received from the input source. This device only supports PCM 2CH.

Note

- A. The display TV or monitor must support an audio return function and the function be must turned on in order to perform properly.
- B. The display TV or monitor's HDMI input jack must connected to the one with an audio return function.

8. Remote Control

- ① MENU: Press to enter into menu selection, an OSD will appear from the display.
- ② Enter: Press to confirm the selection.
- ③ 1, 2, 3, 4: Press to select input port.
- ④ ▲▼◀▶: Use these buttons to select/adjust OSD menu's object.



9. RS-232 Protocols

9.1 Pin Assignment

The connection between Switcher and remote controller with RS-232 modem cable.

Switcher			Remote Controller	
PIN	Definition		PIN	Definition
1	NC	→ ←	1	NC
2	TxD		2	RxD
3	RxD		3	TxD
4	NC		4	NC
5	GND		5	GND
6	NC		6	NC
7	NC		7	NC
8	NC		8	NC
9	NC		9	NC

Baud Rate: 115200 bps

Data bit: 8 Bits

Parity: None

Stop Bit: 1 bit

Flow Control: None

9.2 Commands

Command Code	Response	Description
s port 1	>Select Input Port1	Select Input Port1
s port 2	>Select Input Port2	Select Input Port2
s port 3	>Select Input Port3	Select Input Port3
s port 4	>Select Input Port4	Select Input Port4
s menu 0	>OSD MENU Off	OFF : No Display On-Screen MENU
s menu 1	>OSD MENU On	ON : Display On-Screen MENU
s info 0	>OSD System Information Off	OFF : No Display On-Screen System Information
s info 1	>OSD System Information On	ON : Display On-Screen System Information
s menuct u	>MENU Cursor Up Move	MENU Project Up Move
s menuct d	>MENU Cursor Down Move	MENU Project Down Move
s menuct l	>MENU Cursor Left Move	MENU Project Left Move
s menuct r	>MENU Cursor Right Move	MENU Project Right Move
s menuct e	>MENU Cursor Enter	MENU Project Enter
s arctx 1	>ARC mode is on	ARC Mode Is On
s arctx 0	>ARC mode is off	ARC Mode Is Off
s reset	>System Reset	System Reset

Command Code	Response	Description
r port	>Select port ?	Show Select Input Port Status
r arctx	>ARC mode is ?	Show ARC Mode Status
r fwver	>FW Version : Vx.xx	Show Firmware Version

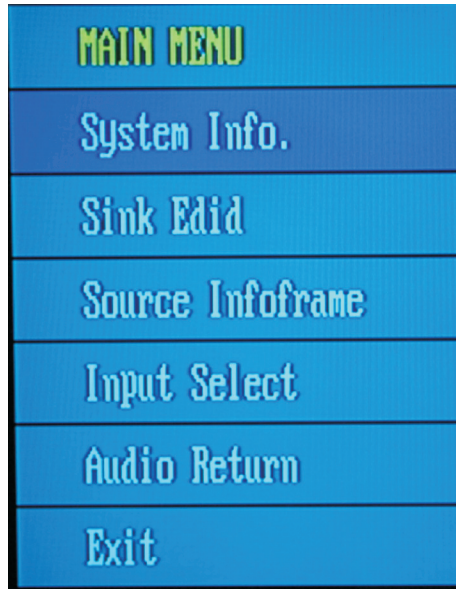
10. OSD Menu

Press the OSD button from the device or MENU button from the remote control to bring up the OSD on the display.

Press [▲/▼] to highlight an option

Press [◀/▶] to select the option

Press [Enter] to confirm/exit the selection



10.1 System Info

Press [▲/▼] to highlight an option

Press [Enter] to check the input/output device information and software version.

Press [MENU] to exit menu

Press [Enter] to confirm/exit the selection

10.2 Sink Edid

Press [▲/▼] to highlight an option

Press [◀/▶] to select the option

Press [Enter] to confirm/exit the selection

Press [MENU] to exit menu

Option	Description
Block Data	To check the sink Block0 and Block1's table of EDID
Description	To check the sink description of EDID

10.3 Source Infoframe

Press [▲/▼] to highlight an option

Press [◀/▶] to select the option

Press [Enter] to confirm/exit the selection

Press [MENU] to exit menu

Option	Description
AVI (AVI infoframe data)	To check the source video infoFrame Packet
AUD (Audio infoframe data)	To check the source audio infoFrame Packet

10.4 Input Select

Press [▲/▼] to highlight an option

Press [◀/▶] to select the option

Press [Enter] to confirm the selection

Press [MENU] to exit menu

10.5 Audio Return

Press [▲/▼] to highlight an option

Press [◀/▶] to select the option

Press [Enter] to confirm the selection

Press [MENU] to exit menu

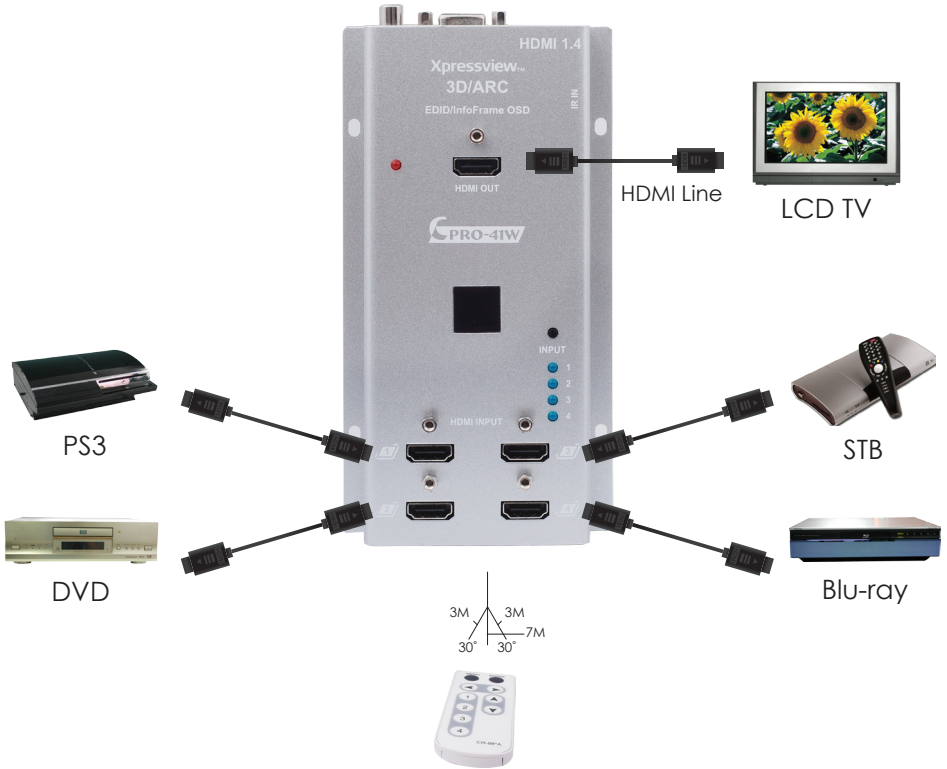
Option	Description
Audio Return	On/Off

10.6 Exit

Press [▲/▼] to highlight an option

Press [Enter] to confirm/exit the selection

11. Connection and Installation



Acronyms



Acronym

Complete Term

HDCP

High-bandwidth Digital content protection

HDMI

High-Definition Multimedia Interface

CEC

Consumer Electronics Control



CYPRESS TECHNOLOGY CO., LTD.
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