



# CMPRO-4H4H

4 by 4 HDMI Matrix



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	10/02/14	Preliminary Release
VS1	10/03/14	Updated text/diagrams



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## 1. INTRODUCTION

The 4 by 4 HDMI Matrix with 4K×2K Support is capable of switching and routing an HDMI signal from any of its four sources to any of four connected HDMI displays, allowing any source to be shown independently on any display. It supports 3D, 'Deep Color' and High Definition lossless audio formats. Control of inputs and outputs can be easily operated through the on-panel buttons, IR remote control, RS-232 or Web GUI controls.

## 2. APPLICATIONS

- Showroom display control
- Educational demo
- Installation usage
- Advertising display

## 3. PACKAGE CONTENTS

- 4 by 4 HDMI Matrix
- IR Extender
- Remote Control (CR-33)
- 5V/3.6A DC Power Adaptor
- Operation Manual

## 4. SYSTEM REQUIREMENTS

HDMI source devices such as Blu-ray/DVD player, games consoles or set-top boxes and HDMI equipped output display (HDTV/monitor) and HDMI High Speed cables.

## 5. FEATURES

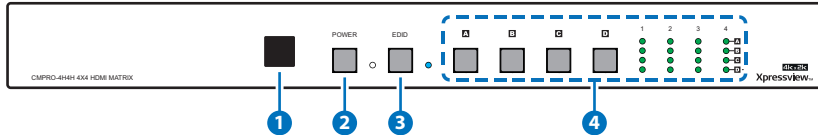
- Supports Standard and High Definition resolutions up to 4K×2K (UHD)
- Supports up to 7.1 channels of High Definition audio (LPCM, Dolby TrueHD, and DTS-HD Master Audio)
- Supports 'Deep Color' up to 1080p/36-bit
- Supports Internal/External EDID settings
- Supports control through On-panel Buttons, IR, RS-232, and Web GUI

Note:

1. *This unit does not support HDMI to DVI conversion.*
2. *For playback of 4K×2K HDMI source signals, a 4K×2K capable display and High Speed HDMI cables are required.*

## 6. OPERATION CONTROLS AND FUNCTIONS

### 6.1 Front Panel



- 1 **IR Window:** Accepts the remote control signal of this Matrix only.
- 2 **POWER Button and LED:** Press this button to power the Matrix ON/OFF. The LED will light up when the power is ON.
- 3 **EDID Button and LED:** When in 'TV' mode, the unit will detect the EDID settings of the display connected to Output A. If it detects a 4K×2K capable EDID setting it will transmit the signal in that format to the output ports. If no 4K×2K capable EDID is detected then the unit will detect the EDID settings and output the best resolution that all displays can support.

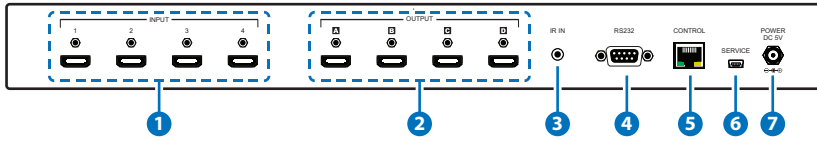
When in 'STD' mode, the unit will use it's own built-in EDID . In this mode, the video output will be set to 1080p@60Hz and the audio at LPCM 2CH Stereo. Use this mode if there are display problems in TV Mode.

*Note: The LED will light when in STD mode.*

- 4 **OUTPUT A/B/C/D Buttons and LEDs:** Press the 'A', 'B', 'C' or 'D' buttons to select the source (1~4) for that output, the corresponding LED will light to indicate the selected source.



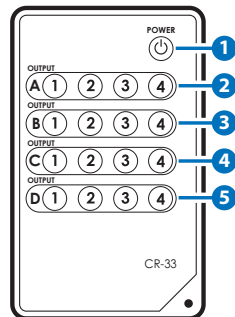
## 6.2 Rear Panel



- 1 **INPUT 1/2/3/4:** Connect to HDMI equipped source devices such as DVD/Blu-ray players, set-top boxes or games consoles.
- 2 **OUTPUT A/B/C/D:** Connect to an HDMI TVs/displays or monitors for display of the selected source signal.
- 3 **IR IN:** Connect the supplied IR Extender for IR signal reception from the remote control included in the package. Ensure that the remote is within the direct line-of-sight of the IR Extender.
- 4 **RS-232:** Connect to a PC/laptop or RS-232 control system with a D-sub 9-pin male cable to control the unit with RS-232 commands (see Section 6.6).
- 5 **CONTROL:** Connect to an active Ethernet link with an RJ45 terminated cable to control the unit with Web GUI (see Section 6.7).
- 6 **SERVICE:** Manufacturer use only.
- 7 **DC 5V:** Connect the 5V DC power supply to the unit and plug the adaptor into an AC outlet.

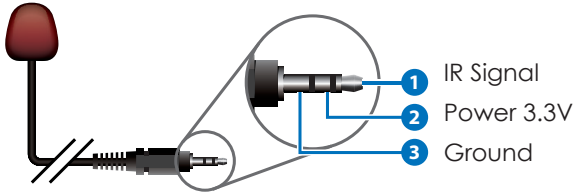
## 6.3 Remote Control

- 1 **POWER:** Press this button to switch the unit ON or to put it into standby mode.
- 2 **OUTPUT A and 1~4:** Press buttons 1~4 to select the required source for Output A.
- 3 **OUTPUT B and 1~4:** Press buttons 1~4 to select the required source for Output B.
- 4 **OUTPUT C and 1~4:** Press buttons 1~4 to select the required source for Output C.
- 5 **OUTPUT D and 1~4:** Press buttons 1~4 to select the required source for Output D.



## 6.4 IR Cable Pin Assignment

### IR Extender



## 6.5 RS-232 Protocol

MATRIX	
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: 19,200bps

Data Bit: 8 bits

Parity: None

Flow Control: None

Stop Bit: 1

## 6.6 RS-232 Commands

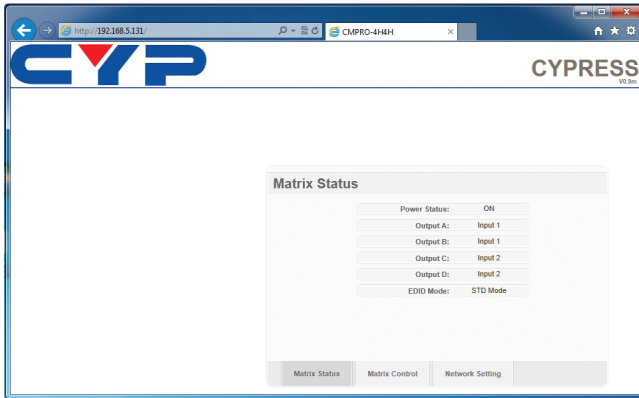
COMMAND	DESCRIPTION
<b>A1~A4</b>	Switch Output A to 1~4
<b>B1~B4</b>	Switch Output B to 1~4
<b>C1~C4</b>	Switch Output C to 1~4
<b>D1~D4</b>	Switch Output D to 1~4
<b>ABC...1~ABC...4</b>	Switch Output A B C... to 1~4 at the same time
<b>SETIP</b>	Setting IP
<b>SETNETMASK</b>	Setting Net Mask
<b>SETGATEWAY</b>	Setting Gateway
<b>RSTIP</b>	IP configuration was reset to factory default <DHCP>
<b>IPCONFIG</b>	Display the current IP config
<b>P0</b>	Power Off
<b>P1</b>	Power On
<b>I1~I4</b>	Switch all the output to 1~4
<b>ST</b>	Display the current matrix state and F/W version
<b>RS</b>	System Reset to A1, B2, C3, D4
<b>EM1~EM2</b>	Setting EDID MODE. 1-STD 2-TV
<b>?</b>	Display all available commands

*Note: RS-232 commands will not execute unless followed by a carriage return. Commands are not case sensitive.*

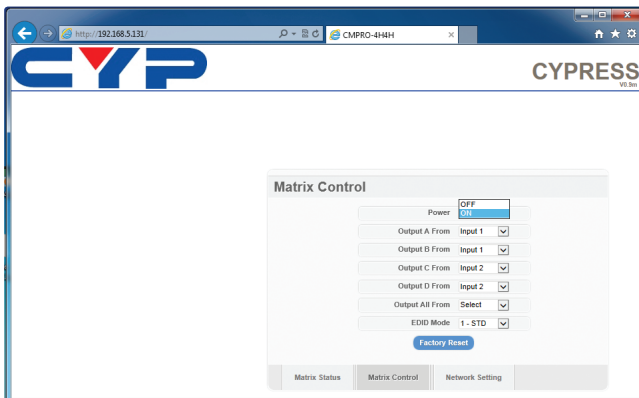


## 6.7 Web GUI Control

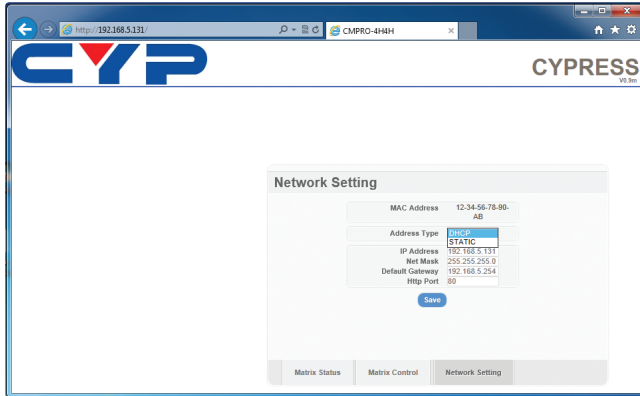
On a PC/Laptop that is connected to the same active network as the Matrix, open a web browser and type the Matrix's IP address on the web address entry bar (The IP Address can be obtained via RS-232 by using the 'help' command or use the default IP: 192.168.0.1). The browser will display the Matrix's status, control and user setting pages.



Click on the 'Control' tab access to power, input/output ports, EDID and factory reset settings.

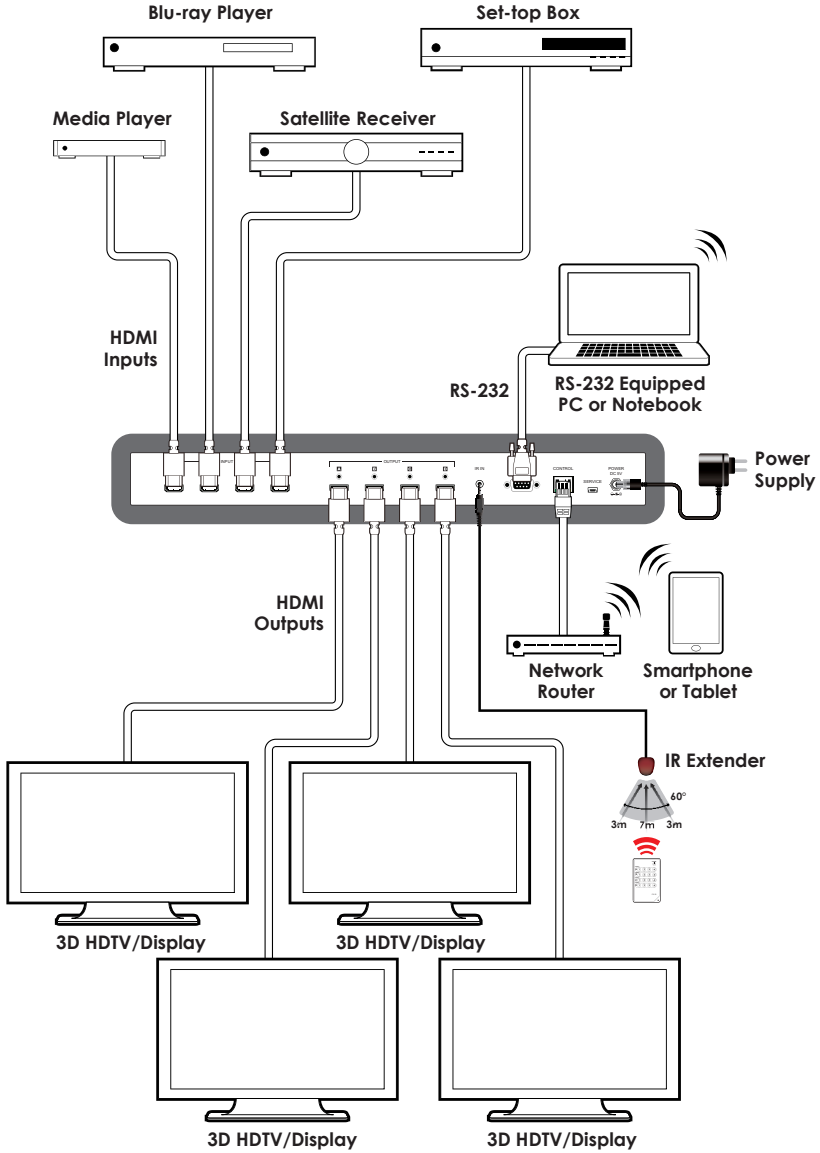


Click on the 'Setting' tab allows user to reset the IP configuration. The system will ask for a reboot of the Matrix each time any of the settings are changed. The IP address used to access the Web GUI control will also need to be changed on the web address entry bar.



*Note: The version of Internet Explorer being used should be Version 8 or better to ensure compatibility with the Web GUI function.*

## 7. CONNECTION DIAGRAM



## 8. SPECIFICATIONS

### 8.1 Technical Specifications

<b>Video Bandwidth</b>	340Mbps /10.2Gbps
<b>Input Ports</b>	4×HDMI (Type A Female), 1×IR Extender (3.5 mm mini-jack), 1×RS-232 (D-Sub 9-pin), 1×Control (RJ45/LAN), 1×Mini USB (Manufacturer use only)
<b>Output Ports</b>	4×HDMI (Type A Female)
<b>Output Resolution</b>	VGA~WUXGA, 480i ~1080p & 4K×2K@24/25/30Hz
<b>HDMI I/O Cable Distance</b>	15m@8-bit, 10m@12-bit, 5m@4K×2K
<b>Power Supply</b>	5V/3.6A DC (US/EU standards, CE/FCC/UL certified)
<b>ESD Protection</b>	Human body model: ±8kV (air-gap discharge) ±4KV (contact discharge)
<b>Dimensions</b>	436 mm (W)×160mm (D)×44 mm (H)/Jacks Excluded 436 mm (W)×167mm (D)×48mm (H)/Jacks Included
<b>Weight</b>	1945g
<b>Chassis Material</b>	Metal
<b>Color</b>	Black
<b>Operating Temperature</b>	0 °C ~ 40 °C / 32 °F ~ 104 °F
<b>Storage Temperature</b>	-20 °C ~ 60 °C / -4 °F ~ 140 °F
<b>Relative Humidity</b>	20 ~ 90% RH (non-condensing)
<b>Power Consumption</b>	10.8W



## 8.2 Supported Resolutions

RESOLUTIONS	INPUT	OUTPUT
640×480@60	✓	✓
640×480@72	✓	✓
640×480@75	✓	✓
720×480@60	✓	✓
720×576p@50	✓	✓
800×600@60	✓	✓
800×600@72	✓	✓
800×600@75	✓	✓
1024×768@60	✓	✓
1024×768@70	✓	✓
1024×768@75	✓	✓
1280×720@50	✓	✓
1280×720@60	✓	✓
1280×720p@60	✓	✓
1280×768@60	✓	✓
1280×800@60	✓	✓
1280×1024@60	✓	✓
1360×768@60	✓	✓
1600×1200@60	✓	✓
1920×1080i@50	✓	✓
1920×1080i@60	✓	✓
1920×1080p@24	✓	✓
1920×1080p@25	✓	✓
1920×1080p@30	✓	✓
1920×1080p@50	✓	✓
1920×1080p@60	✓	✓
1920×1200@60 (RB)	✓	✓
3840×2160@24/25/30	✓	✓
4096×2160@24	✓	✓



## 9. ACRONYMS

ACRONYM	COMPLETE TERM
<b>4K×2K</b>	Ultra HD (3840×2160/4096×2160)
<b>CEC</b>	Consumer Electronic Control
<b>EDID</b>	Extended Display Identification Data
<b>HDCP</b>	High-bandwidth Digital Content Protection
<b>HDMI</b>	High-Definition Multimedia Interface







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