CYP

CSI-8H8CV2IR

8 HDMI over CAT6 Point-to-Point Transmitter
(with IR 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	11/07/12	Preliminary Release
VR1	17/02/13	Add CAT5e/6/7 Cable Spec.

CONTENTS

1. INTRODUCTION

The 8 HDMI over CAT6 Point-to-Point Transmitter (with IR Matrix) supports the transmission of Video (up to 1080p Full HD/1920×1200@60 Hz) with multichannel digital audio, up to eight pairs of high definition source and CAT5e/6 output. It supports digital audio formats such as LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Mater Audio. 3D content can be displayed when connecting a 3DTV and 3D source. The Transmitter allows the point-to-point connection between source equipment and output display, over distances up to 100 meters along with PoE (Power over Ethernet) feature. There is a built-in crosspoint IR matrix providing additional control over 8-in-8-out IR channels.

2. APPLICATIONS

- Commercial advertising and display
- Lecture room display and control
- Hyper market demonstration and control
- Any Smart AV Installation

3. PACKAGE CONTENTS

- HDMI over CAT6 Transmitter with 8×8 IR Matrix
- 8×Receiver for HDMI over CAT6 (Optional)
- 2×IR Extender
- 2×IR Blaster
- 24 V/6.25 A DC Adaptor
- Remote Control with 3V battery
- Operation Manual

4. SYSTEM REQUIREMENTS

- HDMI equipped input source devices with HDMI cables
- HDMI equipped output displays (TVs or monitors) or HDMI equipped AV receivers with HDMI cables
- Industry standard CAT5e/6/7 cables

5. FEATURES

- HDMI, HDCP1.1 and DVI compliant
- Supports HDMI 3D, 4k x 2k features
- Supports Stereo digital audio signal input and output
- Supports high bit-rate audio up to 192 kHz
- Supports resolutions VGA~WUXGA and 480i~1080p dependent upon the output display's EDID settings
- Supports extension up to 100 meters through CAT5e/6
- Supports 3D signal display dependent upon the output display's EDID settings
- Supports HDMI input up to 10 meters at 8-bit resolution or 3 meters at 12-bit resolution
- Supports bi-directional IR from input and output locations
- Supports RS-232, remote control and on-panel control
- Supports PoE (Power over Ethernet) on compatible receivers only
- 2U size design

Note: *The PoE function is designed for powering compatible receiver units only—non-PoE receivers will need their own power supply. Receivers of another brand may not be compatible.*

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel
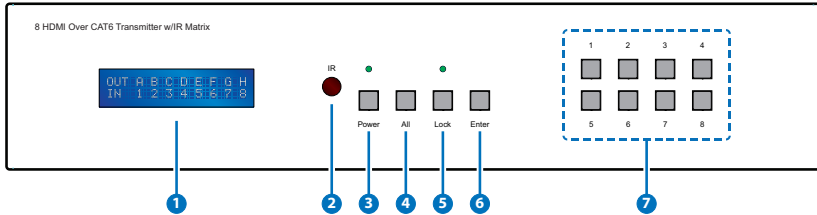
1 LCM: Displays the information for each IR input and output setting.

2 IR: IR Receiver window (accepts the remote control signal of this device and all output displays or source devices).

3 Power: Press this button to power the device on/off. The LED will illuminate green when the power is on, red when it is in 'Standby' mode.

4 All: Press this button to select all IR output with one IR input signal. The sequence should be pressed ALL → Number Key → ENTER.

5 Lock: Press this button to lock all the buttons on the panel; press again to unlock. The LED will illuminate in green when locked.

6 Enter: Press this button to confirm when changing a setting.

7 Selection 1~8

When selecting the IR input for a specific IR output, press the Number Key first to select the output and then press the Number Key again to select the input.

6.2 Rear Panel
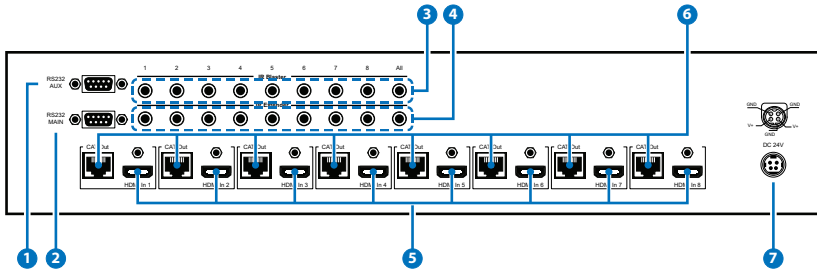
1 **RS-232 AUX:** Connect to a device that can be controlled (via D-Sub 9-pin male cable) by RS-232 commands.

2 **RS-232 MAIN:** Connect to a PC or laptop with D-Sub 9-pin male cable for the transmission of RS-232 commands.

3 **IR Blaster 1~All:** Connect the supplied IR blasters (included in the package) for IR signal transmission, IR signals will be relayed from the designated output IR extender. For the "All" port, the IR signals will be relayed from all output at the same time. Place the IR blaster in direct line-of-sight of the equipment to be controlled.

4 **IR Extender 1~All:** Connect the supplied IR extenders (included in the package) for IR signal reception the signal will be relayed to the designated output device via the IR blaster. For the "All" port, the signal will be relayed to all outputs. Ensure that remote being used is within the direct line-of-sight of the IR extender.

5 **HDMI In 1~8:** Connect to the HDMI input source devices such as a DVD player or a Set-top Box with HDMI cables or DVI to HDMI cables.

6 **CAT Out 1~8:** Connect to the CAT in port of receiver units with a single CAT5e/6/7 cable for HDMI Audio/Video and IR/RS-232 control signal sending.

Note: Do NOT connect these CAT outputs to the LAN port of receiver units—this will cause serious damage to the receiver unit.

7 **DC 24V:** Plug the 24V DC power supply (included in the package) into the unit and connect the adaptor to an AC outlet. This unit will also power PoE (Power over Ethernet) capable receiver units.

6.3 Remote Control for IR Matrix

The remote control unit included in the package is for IR Matrix only, and can be used to control the IR channel mapping of individual or all receivers, depends on the dipswitch setting.

There are total of four dipswitches, when all of them are set to ON/↑, the remote control unit is able to control the IR routing of all receivers. For example, if you want to set up the bi-directional IR channel between Output A receiver and Input 5, simply press A first and then press 5.

You can set the remote control unit to control the IR routing of single receiver only, please refer to the dipswitch settings in section 6.6. For example, when all dipswitches are set to OFF/↓, only the IR channel of Output A receiver can be selected, when you want to set up the bi-directional IR channel between Output A receiver and Input 3, simply press 3.

6.4 IR Custom Code

NO.	DATA	NO.	DATA
1	88	A	8A
2	8C	B	8E
3	90	C	92
4	85	D	C6
5	C2	E	99
6	9C	F	98
7	D8	G	84
8	87	H	97

6.5 Discrete IR Codes

Select / Dipswitch	Custom Code
output A ↓↓↓↓	807F
output B ↑↓↓↓	807B
output C ↓↑↓↓	8077
output D ↑↑↓↓	8073
output E ↓↓↑↓	803F
output F ↑↓↑↓	803B
output G ↓↑↑↓	8037
output H ↑↑↑↓	8033

6.6 IR Dip Switch Position with Output Selection

	Selects OUTPUT A		Selects OUTPUT E
	Selects OUTPUT B		Selects OUTPUT F
	Selects OUTPUT C		Selects OUTPUT G
	Selects OUTPUT D		Selects OUTPUT H

6.7 IR Cable Pin Assignment

IR Blaster

1. Power 5 V
2. IR Blaster Signal
3. NC

IR Receiver

1. IR Signal
2. Power 5 V
3. Grounding
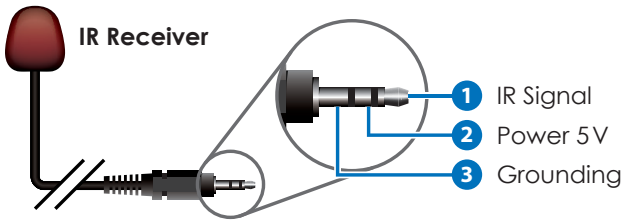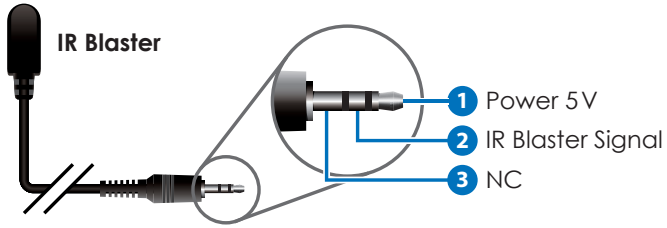
6.8 RS-232 Pin Assignments

CSI-8H8CV2IR			Remote Control Console	
PIN	Assignment		PIN	Assignment
1	NC		1	NC
2	TX		2	RX
3	RX	→	3	TX
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: 19200 bps/A or 9600/B

Data bit: 8-bit

Parity: None

Stop bit: 1-bit

Flow Control: None
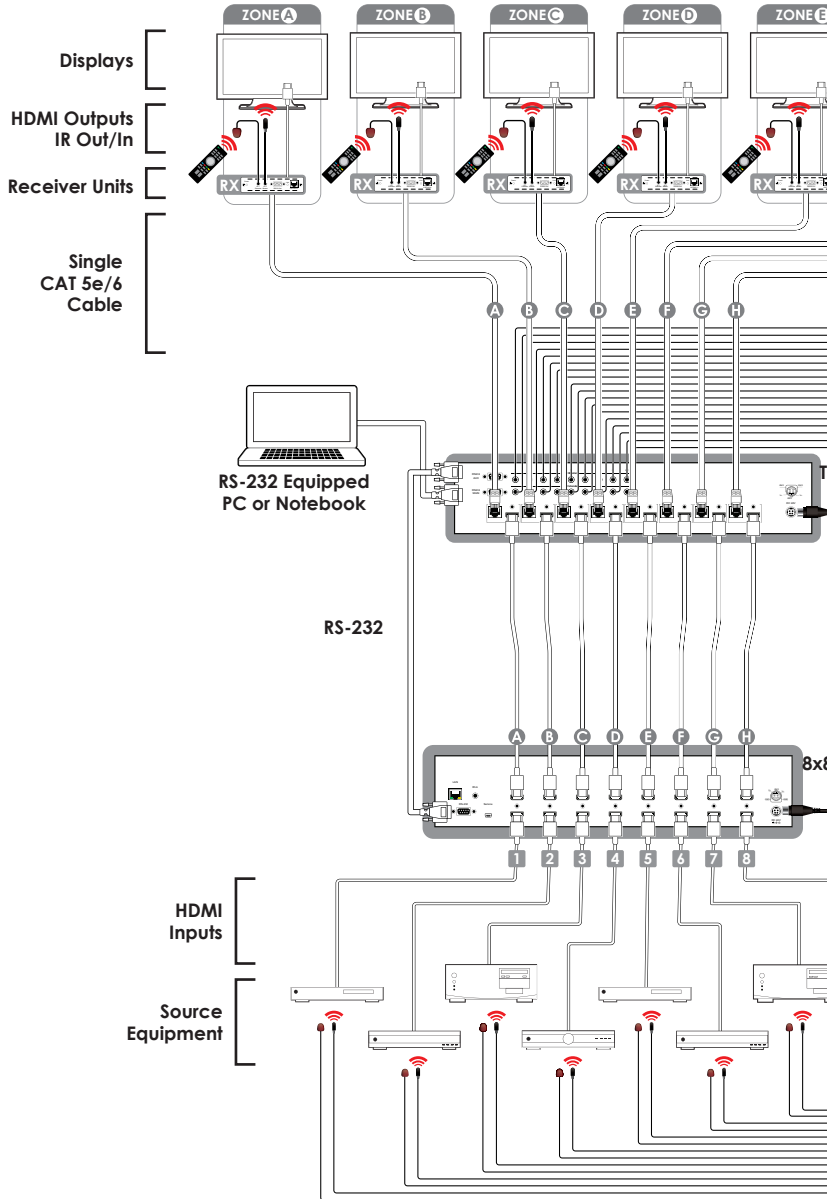
6.9 RS-232 Commands for IR Matrix

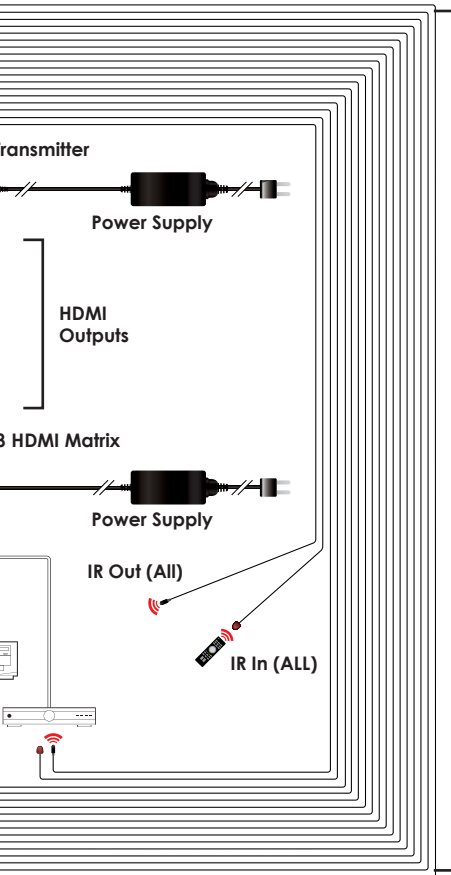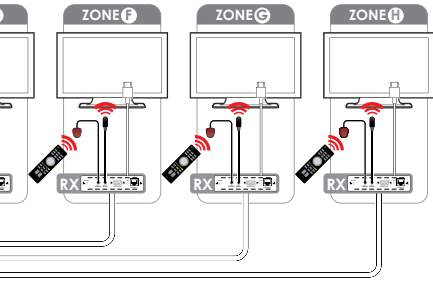| Command A	Description
A1~A8	Switch Output A to 1~8
B1~B8	Switch Output B to 1~8
C1~C8	Switch Output C to 1~8
D1~D8	Switch Output D to 1~8
E1~E8	Switch Output E to 1~8
F1~F8	Switch Output F to 1~8
G1~G8	Switch Output G to 1~8
H1~H8	Switch Output H to 1~8
ABCD...1~ABCD...8	Switch Output A B C D... to 1~8 at the same time
P0	Power OFF
P1	Power ON
I1~I8	Switch all the Output to 1~8
ST	Display the current matrix status and F/W version
RS	System reset to A1, B2, C3, D4, E5, F6, G7, H8
?	Display all available commands

Note: 1. Press "ALL" + "ENTER" +"1" buttons all together from the panel to switch RS-232 to A and the LCM will display baud rate 19200bps.

2. Command "RS" will reset output A~H to 1~8 and shut down the device automatically.

Command B	Description
POWER 00	Power Off (Standby)
POWER 01	Power On
PORT 11~18	Output A select Input1~8
PORT 21~28	Output B select Input1~8
PORT 31~38	Output C select Input1~8
PORT 41~48	Output D select Input1~8
PORT 51~58	Output E select Input1~8
PORT 61~68	Output F select Input1~8
PORT 71~78	Output G select Input1~8
PORT 81~88	Output H select Input1~8

Note: 1. *Press "ALL" + "ENTER" +"2" buttons all together from the panel to switch RS-232 to B and the LCM will display baud rate 9600bps.*

2. *All the commands will not be executed unless followed with a carriage return. All letters are not case-sensitive.*

7. CONNECTION DIAGRAM

Displays

**HDMI Outputs
IR Out/In**

Receiver Units

ZONE A ZONE B ZONE C ZONE D ZONE E

RX RX RX RX RX

**Single
CAT 5e/6
Cable**

A B C D E F G H

**RS-232 Equipped
PC or Notebook**

RS-232

A B C D E F G H

8x8

1 2 3 4 5 6 7 8

**HDMI
Inputs**

**Source
Equipment**

ZONE F ZONE G ZONE H

RX RX RX

Transmitter

Power Supply

HDMI
Outputs

HDMI Matrix

Power Supply

IR Out (All)

IR In (ALL)

IR Out/In

1.5m	
60°	60°
	3m 7m 3m
IR BLASTER	IR RECEIVER

![CYP logo]
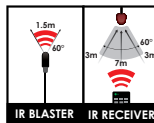
8. SPECIFICATIONS

Video Bandwidth	300 MHz/10.2 Gbps
Input Ports	8×HDMI, 9×IR Extender, 1×RS-232
Output Ports	8×CAT5e/6/7, 9×IR Blaster, 1×RS-232
Input/Output Resolution	VGA~WUXGA, 480i~1080p@24/50/60, 4kx2k@24/25/30
ESD Protection	Human-body Model: ±8 kV (Air-gap discharge) ±4 kV (Contact discharge)
Power Supply	24 V/6.25 A DC (US/EU standards, CE/FCC/ UL certified)
Dimensions	432 mm (W)×210 mm (D)×93 mm (H)
Weight	3312 g
Chassis Material	Metal
Silkscreen Color	Black
Operating Temperature	0 °C~40 °C/32 °F~104 °F
Storage Temerature	−20 °C~60 °C/−4 °F~140 °F
Relative Humidity	20~90 % RH (non-condensing)
Power Consumption	90 W (Including Transmitter)

CAT5e/6/7 Cable Specification

Cable Type	Range	Pixel clock rate	Video Data Rate	Supported Video
CAT5e/6/7	100 m	<=225 MHz	<=5.3 Gbps (HD Video)	Up to 1080p, 60 Hz, 36 bits, 3D (data rates lower than 5.3 Gbps or below 225 MHz TMDS clock).
	70 m	>225 MHz	> 5.3 Gbps (Ultra HD Video)	4K2K, 30Hz video formats

9. ACRONYMS

ACRONYM	COMPLETE TERM
DTS	Digital Theater System
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
LCM	Liquid Crystal Module
USB	Universal Serial Bus
VGA	Video Graphics Array
WUXGA	Widescreen Ultra Extended Graphics Array