CMSI-8H8HC

8×8 HDMI Matrix with Simultaneous Dual CAT6 and HDMI Outputs

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	14/11/12	Preliminary Release
VR1	04/06/13	RS-232 & Telnet's SetIP Command

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1. INTRODUCTION

The 8×8 HDMI Matrix with simultaneous CAT6 and HDMI outputs connects eight HDMI sources to 16 displays. This matrix features 8 HDMI outputs and each HDMI output is mirrored to provide a Dual-CAT-Cable output which runs simultaneously. Connect a CH-1106RX Receiver to each of the Dual-CAT-Cable outputs to extend the HDMI signal up to 45m for multi-room connectivity.This matrix switcher can be controlled via the supplied IR Remote Control, RS-232, Telnet, Web GUI or by using the selection buttons on the front panel. This device supports 'Deep Color', High Definition Audio, and 3D signal compatibility.

2. APPLICATIONS

- Multi-zoned HD installations
- HD and AVR Sub-zone installation
- Video and TV wall display and control
- Security surveillance and control
- Commercial advertising, display and control
- University Lecture hall display and control
- Retail demonstration and sales
- Telnet and Web GUI Control

3. PACKAGE CONTENTS

- 8×8 HDMI over Dual CAT6 Matrix
- 1×IR Extender
- 2×IR Blaster
- 1×24 V/6.25 A DC Power Adaptor
- 1×IR Remote Control
- Operation Manual

4. SYSTEM REQUIREMENTS

- HDMI equipped source devices, connect with HDMI cables or DVI equipped source, connect with DVI to HDMI cables
- HDMI equipped displays (TVs or monitors) or HDMI equipped AV receivers, connect with HDMI cables
- HDMI over dual CAT6 Receiver(s) with industry CAT6 cable

5. FEATURES

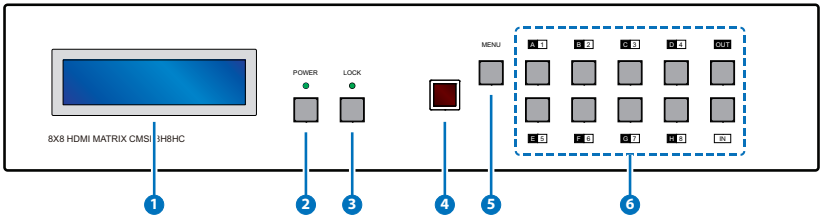
- HDMI, HDCP 1.1 and DVI compliant
- Supports HDMI 3D pass-through
- Supports resolutions from VGA~WUXGA@60RB and HD resolutions from 480i~1080p dependent upon the display's EDID settings
- Supports transmission distances up to 45 meters through Dual CAT6 cables
- Supports 3D signal display dependent upon the display's EDID settings
- Supports simultaneous HDMI and CAT6 outputs
- Supports HDMI input up to 15 meters at 8-bit resolution or 10 meters at 12-bit resolution; CAT output up to 45 meters at 8-bit resolution
- Supports IR pass-back through CAT for source control
- Supports RS-232, remote control, on-panel control and IP Control (Telnet & Web GUI)
- 2U size design
- Supports external and internal EDID settings
- Supports LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio transmission

Note:

1. Tested with CAT-6/23AWG cable, results may vary with cables of a different specification.
2. Cable distance tested with a Sony PS3 40G, 37" Philips 8-bit LCD TV and 37" Samsung 12-bit LCD TV.
3. Figures provided in this manual are for reference only, actual figures may vary depending on the source equipment and display being used along with the type of cables and their specifications.
4. Do not connect the LAN/CONTROL port to CAT outputs of this device.

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



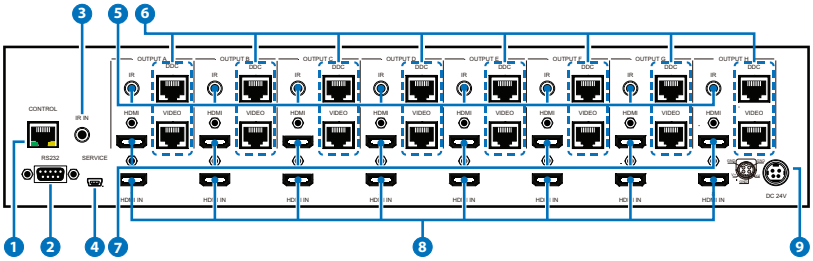
1. **LCM:** Displays the setting information of each input and output setting.
2. **POWER:** Press this button to power the device on/off. The LED will illuminate green when the power is on, red when it is in 'Standby' mode.
3. **LOCK:** Press this button to lock all the buttons on the panel, press again to unlock.
4. **IR:** IR Receiver window (accepts the remote control signal of this device only).
5. **MENU:** Press this button to access the LCM menu system, from here EDID settings can be managed and IP system settings are displayed.
6. **1~8/A~H and OUT/IN:** Press the OUT or IN button to select the output or input mode and then press the required number button to make the selection accordingly.

   For example, if outputs A~D need to be set to input 1 and outputs E~H need to be set to input 2, then the following sequence of button presses need to be performed:

   Press: OUT→A→B→C→D→IN→1→MENU,
   and then press: OUT→E→F→G→H→IN→2→MENU.

   Note: If the menu button is not pressed the selection will not be changed.

6.2 Rear Panel



1. **CONTROL:** This port is the link for Telnet and Web GUI controls, connect to an active Ethernet link with an RJ45 terminated cable (for further details, please refer to section 6.8 & 6.9).

   Warning: Please do not connect this port directly to the PC/Laptop as the Telnet function will not work.

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

3. **IR IN:** Connect to the IR extenders for IR signal reception from the remote control of the Matrix. Ensure that the remote is within the direct line-of-sight of the IR extender when used.

4. **SERVICE:** Manufacturer use only.

5. **IR OUT A~H:** Connect to the IR blasters for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled for it will blaster out the IR signal received from the reciever side choosen by input selection.

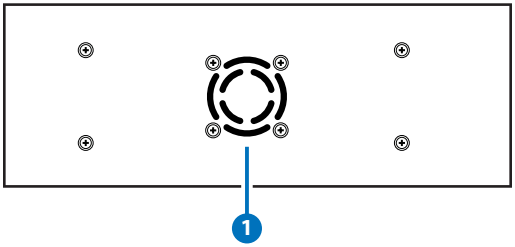
6. **DDC/VIDEO OUTPUT A~H:** Connect from these CAT outputs to the Dual-CAT-Cable input ports of the receiver units with a pair of CAT5e/6/7 cables for HDMI Audio/Video and IR control signal transmission.

7. **HDMI OUT A~H:** Connect to HDMI equipped TVs or monitors for display of the HDMI input source signal.

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

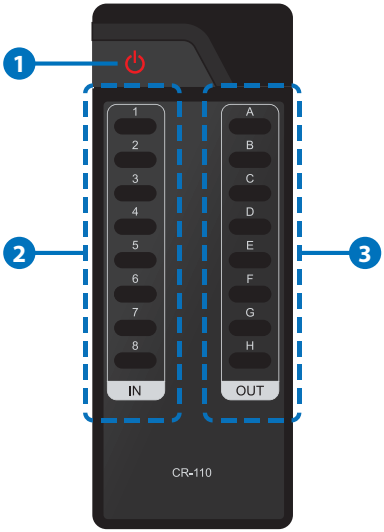
9. **DC 24V:** Plug the 24 V DC power supply into the unit and connect the adaptor to an AC outlet.

6.3 Side Panel



1 **Fan Ventilator:** These are air ventilation areas, DO NOT block these areas or cover it with any object. Please allow adequate space around the unit for air circulation.

6.4 Remote Control

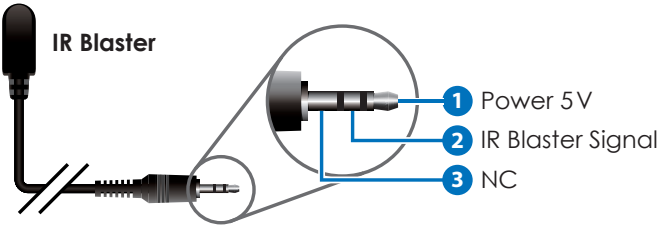


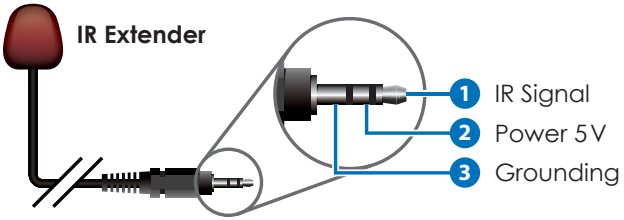
1 **POWER:** Press this button to switch on the device or set it to standby mode.

2 **IN**: Input ports selection 1~8.

3 **OUT**: Output ports selection A~H.

6.5 IR Cable Pin Assignment





6.6 RS-232 Pin Assignment

CMSI-8H8HC			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
Data Bit: 8-bit
Parity: None
Stop Bit: 1-bit
Flow Control: None

6.7 RS-232 and Telnet Commands

Command	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
ABCE…1~ABCD…8	Switch Output ABCD… to 1~8 at the same time
SETIP <IP> <SubNet> <GW>	Setting IP. SubNet. GateWay<Static IP>
RSTIP	IP configuration was reset to factory defaults<DHCP>
IPCONFIG	Display the current IP config
P0	Power Off
P1	Power On
I1~I8	Switch all the output to 1~8
ST	Display the current matrix state and firmware version
RS	System Reset to H8
EM	Setting EDID MODE. 1-STD 2-TV.
?	Display all available commands
QUIT	Exit (Telnet only)

Note: Any commands will not be executed unless followed by a carriage return. Commands are case-insensitive.

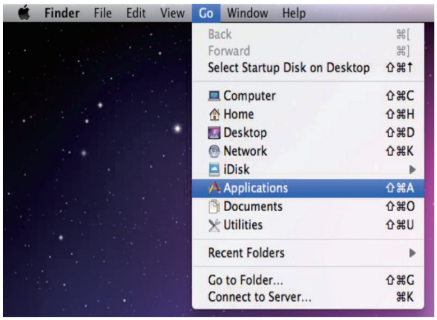
6.8 Telnet Control

Before attempting to use the telnet control, please ensure that both the Matrix (via the 'LAN port) and the PC/Laptop are connected to the active networks.

"cmd" with then press enter.

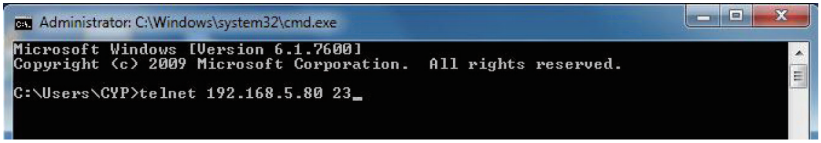
Under Mac OS X, go to Go→Applications→Utilities→Terminal

See below for reference.

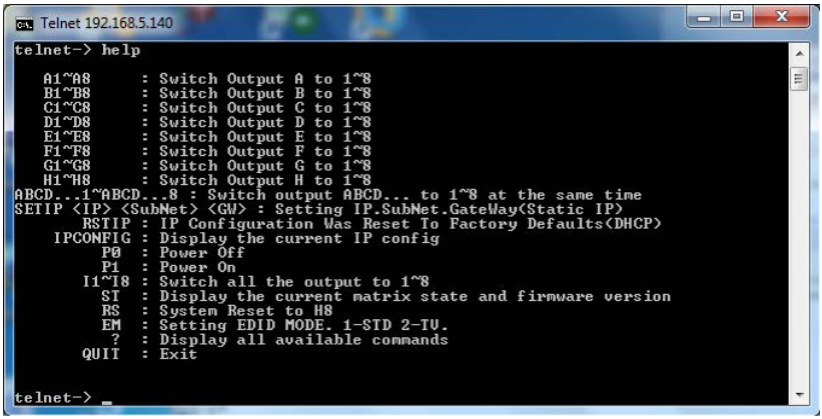


Once in the command line interface (CLI) type "telnet", the IP address of the unit you wish to control and "23", then hit enter.

Note: The IP address of the Matrix can be displayed on the device's LCM monitor by pressing the Menu button twice/three times.



This will bring us into the device which we wish to control. Type "HELP" to list the available commands.

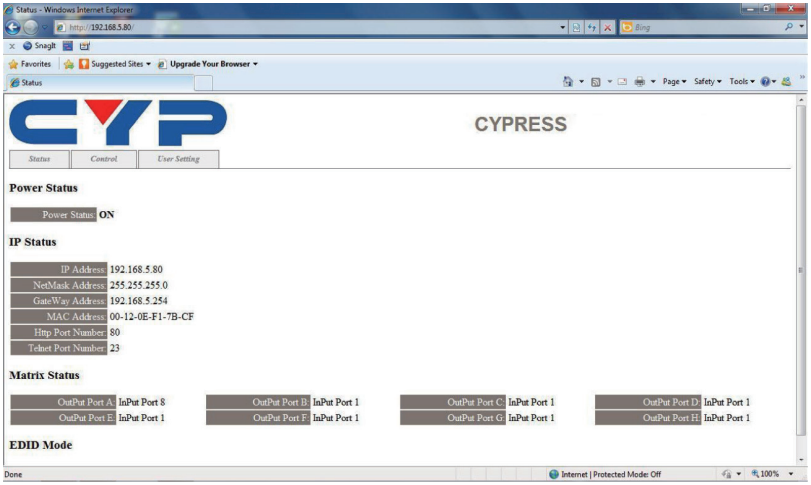


Type “IPCONFIG” To show all IP configurations. To reset the IP, type “RSTIP” and to use a set static IP, type "SETIP" (For a full list of commands, see Section 6.7).

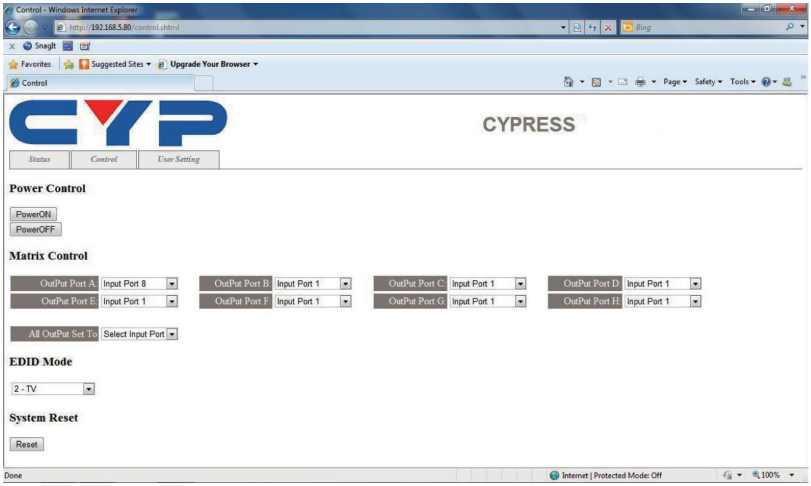
Note: Any commands will not be executed unless followed by a carriage return. Commands are not case-sensitive. If the IP is changed then the IP Address required for Telnet access will also change accordingly.

6.9 Web GUI Control

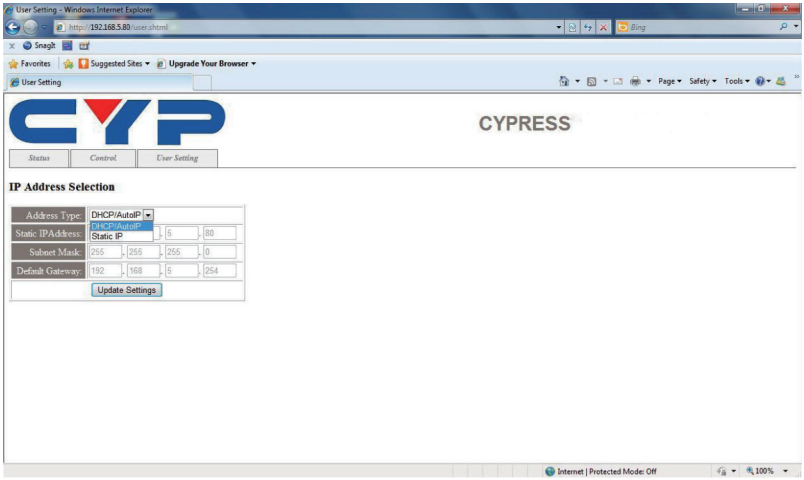
On a PC/Laptop that is connected to the same active network as the Matrix, open a web browser and type device's IP address on the web address entry bar. The browser will display the device's status, control and User setting pages.



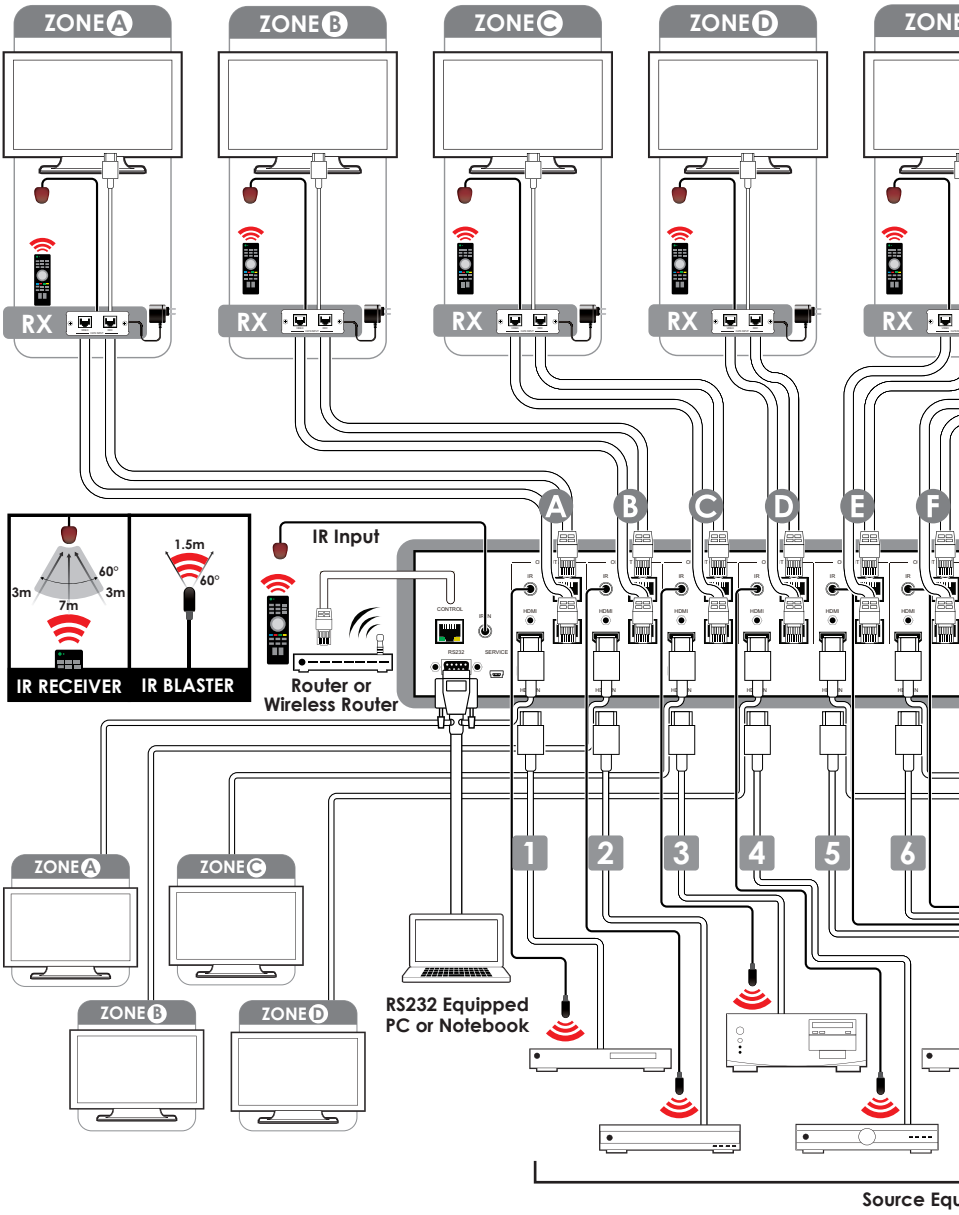
Click on the 'Control' tab to control power, input/output ports, EDID and reset mode.

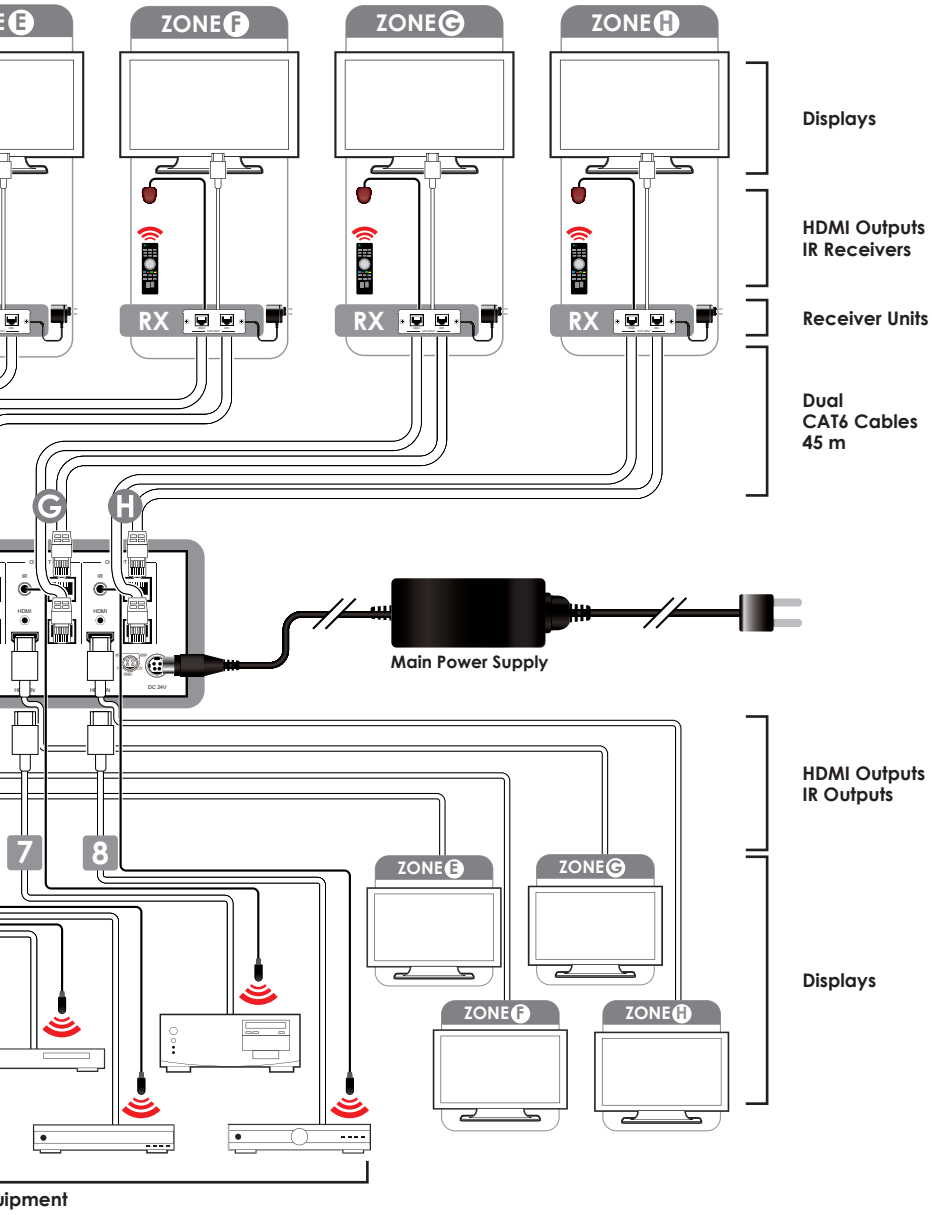


Clicking on the 'User Setting' tab allows you to reset the IP configuration. The system will ask for a reboot of the device every time any of the settings are changed. The IP address needed to access the Web GUI control will also need to be changed accordingly on the web address entry bar.



7. CONNECTION DIAGRAM




ZONE F
ZONE G
ZONE H
RX
RX
RX
Displays
HDMI Outputs
IR Receivers
Receiver Units
Dual
CAT6 Cables
45 m
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Main Power Supply
HDMI Outputs
IR Outputs
7
8
ZONE E
ZONE G
ZONE F
ZONE H
Displays
uipment

8. SPECIFICATIONS

Video Bandwidth	225 MHz/6.75 Gbps
Input Ports	8×HDMI, 1×IR Extender, 1×RS-232, 1×Mini USB Type B (for firmware update only), 1xRJ-45(Control)
Output Ports	8×Dual CAT6, 8×IR Blaster, 8×HDMI
HDMI Input Cable Distance	15m/8-bit, 10m/12-bit
HDMI Output Cable Distance	15m/8-bit, 15m/12-bit
CAT6 Cable Distance	45m/8-bit
ESD Protection	Human-body Model: ± 8kV (Air-gap discharge) ± 4kV (Contact discharge)
Power Supply	24 V/6.25 A DC (US/EU standards, CE/FCC/UL certified)
Dimensions	438 mm (W)×255 mm (D)×93 mm (H)
Weight	4717 g
Chassis Material	Metal
Silkscreen 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	55 W

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
HDTV	High-Definition Television
LCM	Liquid Crystal Monitor
USB	Universal Serial Bus
UXGA	Ultra Extended Graphics Array
VGA	Video Graphics Array

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