CYP

CMSI-8H8CVL
HDBaseT™ 8×8 HDMI over CAT5e/6/7 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
RDV1	09/10/12	Preliminary Release
RDV2	04/06/13	RS-232 & Telnet's SetIP Command
VS1	11/07/13	Updated format/diagrams

CONTENTS

1. INTRODUCTION

The HDBaseT™ Lite 8 by 8 HDMI Matrix over CAT5e/6/7 supports the transmission of video (resolutions up to 1080p Full HD and 1920x1200@60Hz), multi-channel digital audio and control via IR, RS-232, Telnet or WebGUI from eight high definition sources to eight outputs over a single CAT5e/6/7 cable (up to 60m) for each output. It supports high resolution digital audio formats such as LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio as well as 3D content that can be displayed when connecting a 3D TV and 3D source.

2. APPLICATIONS

- HDMI Matrix System
- Video/TV wall display and control
- Security surveillance and control
- Commercial advertising, display and control
- University lecture hall, display and control
- Retail sales and demonstration

3. PACKAGE CONTENTS

- 1×HDBaseT™ 8 by 8 HDMI over CAT5e/6/7 Matrix
- 2×IR Extender Cable
- 2×IR Blaster Cable
- 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
- Certified CAT5e/6/7 cables
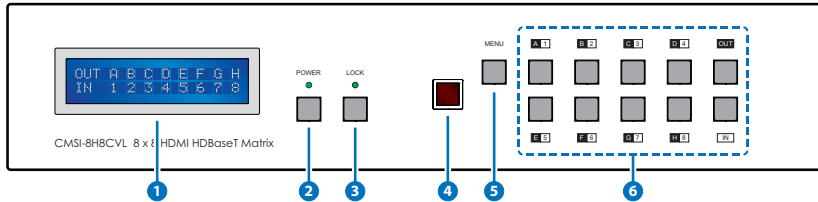- HDBaseT™ Receivers (e.g. CH-506RXL or CH-514RXL)

5. FEATURES

- HDMI, HDCP1.1 and DVI compliant
- Supports HDMI 3D features
- Supports resolutions VGA~WUXGA and 480i~1080p dependent upon the output display's EDID settings
- Supports distances up to 60 meters through CAT5e/6/7 cables
- Supports 3D signal display dependent upon the output display EDID settings
- Supports HDMI input up to 15 meters at 8-bit resolution or 10 meters at 12-bit resolution
- Supports bi-directional IR from input and output locations
- Supports RS-232, remote control, on-panel control and IP Control (Telnet & WebGUI)
- 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: Do not connect the CONTROL port to CAT outputs of this device or to CAT inputs or receiver. Doing so may demage the unit.

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel

OUT A B C D E F G H
IN 1 2 3 4 5 6 7 8

POWER LOCK MENU A1 B2 C3 D4 OUT E5 F6 G7 H8 IN

CMSI-8H8CVL 8 x 8 HDMI HDBaseT Matrix

① ② ③ ④ ⑤ ⑥

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. The LED will illuminate when locked.

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 can be displayed.

⑥ **IN/OUT and 1~8/A~H:** Press the OUT button and then the number buttons to select the required output ports, and press IN button and then a single number button to select the required input source, finally press the MENU button to confirm the selection.

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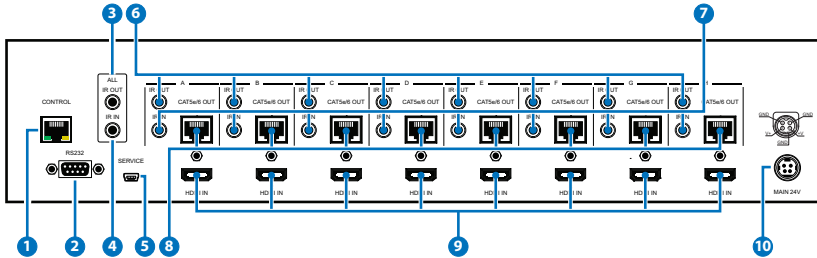
1 CONTROL: This port is the link for Telnet or WebGUI controls, connect to an active Ethernet link with an RJ45 terminated cable (for further details, please refer to section 6.8 & 6.9).

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 RS-232 control.

3 ALL IR OUT: Connect to the IR blaster for IR signal transmission to the source equipment. Place the IR blaster in direct line-of-sight of the equipment to be controlled. It will transmit all signals received from the IR IN.

4 ALL IR IN: Connect to the IR extender for IR signal reception. Ensure that the remote being used is within the direct line-of-sight of the IR extender. It will send the signal to the receiver's IR OUT.

5 SERVICE: Manufacturer use only.

6 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. It will transmit the IR signal received from the corresponding IR input selected in the settings menu.

7 IR IN 1~8: Connect to the IR extenders for IR signal reception. Ensure that the remote being used is within the direct line-of-sight of the IR extender. It will send the IR signal to the corresponding IR OUT.

8 CAT5e/6/7 OUT A~H: Connect these CAT outputs to the CAT input port of the receiver units with a single CAT5e/6/7 cable for HDMI Audio/Video and IR/RS-232 control signal transmission.

Warning: Please do not connect the CAT5e/6/7 output into the receiver's LAN port.

9 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.

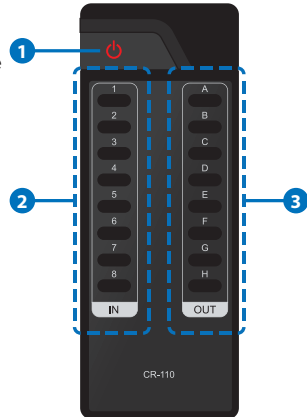**10 DC 24V:** Connect the 24 V DC power supply to the unit and plug the adaptor into an AC outlet.
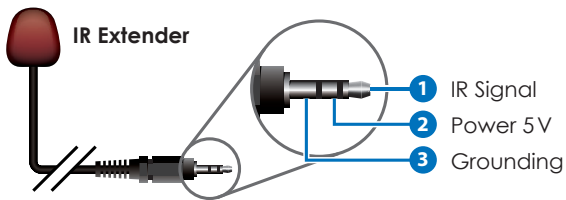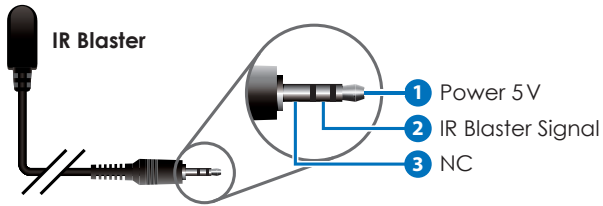
6.3 Side Panel
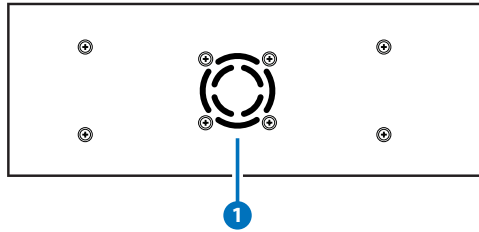
1 **Fan Ventilator:** These are air ventilation areas, DO NOT block these areas or cover it with any object. Please allow adequate space around the unit for air circulation.

6.4 Remote Control

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

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

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

6.5 IR Cable Pin Assignment

IR Blaster

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

IR Extender

1. IR Signal
2. Power 5 V
3. Grounding

6.6 RS-232 Protocols

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

▶
◀

REMOTE CONTROL CONSOLE	
PIN	**Assignment**
1	NC
2	Rx
3	Tx
4	NC
5	GND
6	NC
7	NC
8	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
ABCD…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 A1, B2, C3 etc.
EM	Setting EDID MODE. 1-STD 2-TV.
?	Display all available commands
QUIT	Exit (Telnet only)

Note: Commands will not be executed unless followed by a carriage return. Commands are not case-sensitive.
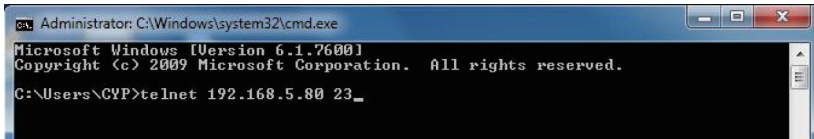
6.8 Telnet Control

Before attempting to use the Telnet control, ensure that both the Matrix (via the LAN/Control port) and the PC/Laptop or control system being used are connected to the same active network.

To access the Telnet control in Windows 7, click on the 'Start' menu and type 'cmd' in the Search Field then press Enter (see below for reference). Under Windows XP, go to the 'Start' menu and click on 'Run', type 'cmd' then press Enter.

Under Mac OS X, go to the file menu then navigate to Go→Applications→Utilities→Terminal (see below for reference.)
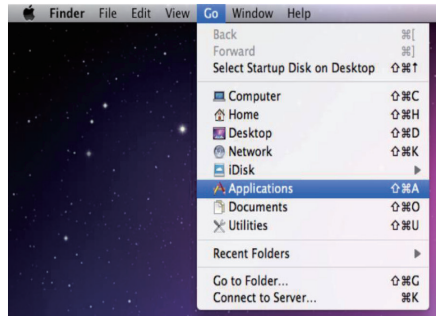
Once in the Command Line Interface (CLI) type 'telnet' along with the IP address of the unit you wish to control and '23' then hit Enter (see below for reference). This will bring us into the device which we wish to control.
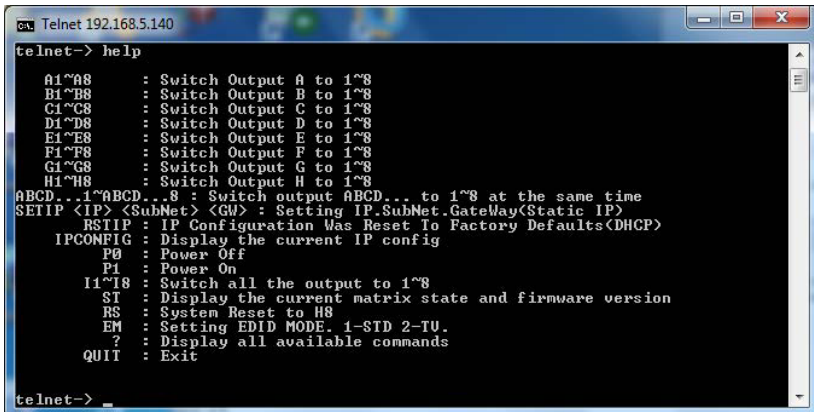

Note: The IP address of the Matrix can be displayed on the device's LCM monitor by pressing the Menu button twice.

Type 'HELP' to list the available commands (see below for reference).

Type 'IPCONFIG' To show all IP configurations. To reset the IP, type 'RSTIP' and to use a set static IP, type 'SETIP'.

Note:

1. *All commands will not be executed unless followed by a carriage return. Commands are case-insensitive.*

2. *If the IP is changed then the IP Address required for Telnet/ WebGUI access will also needs to be changed accordingly.*
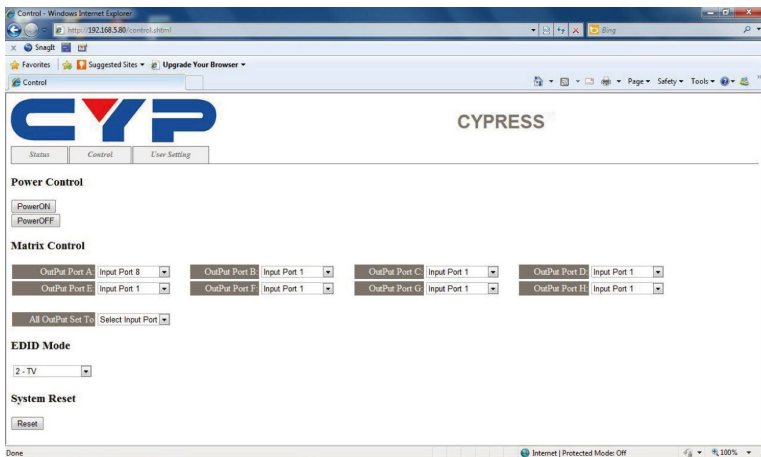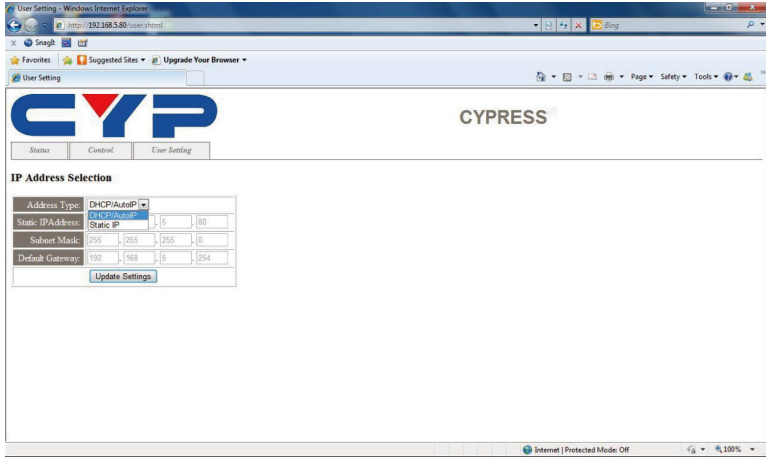
6.9 WebGUI Control

On a PC/Laptop or control system 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, and the control and user settings pages.
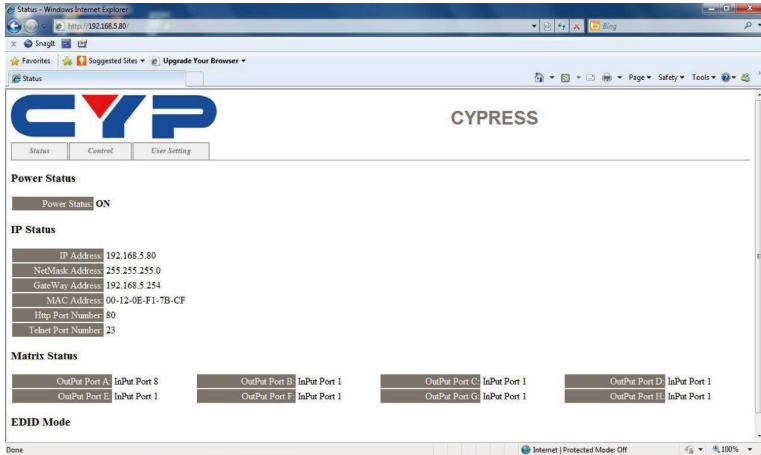
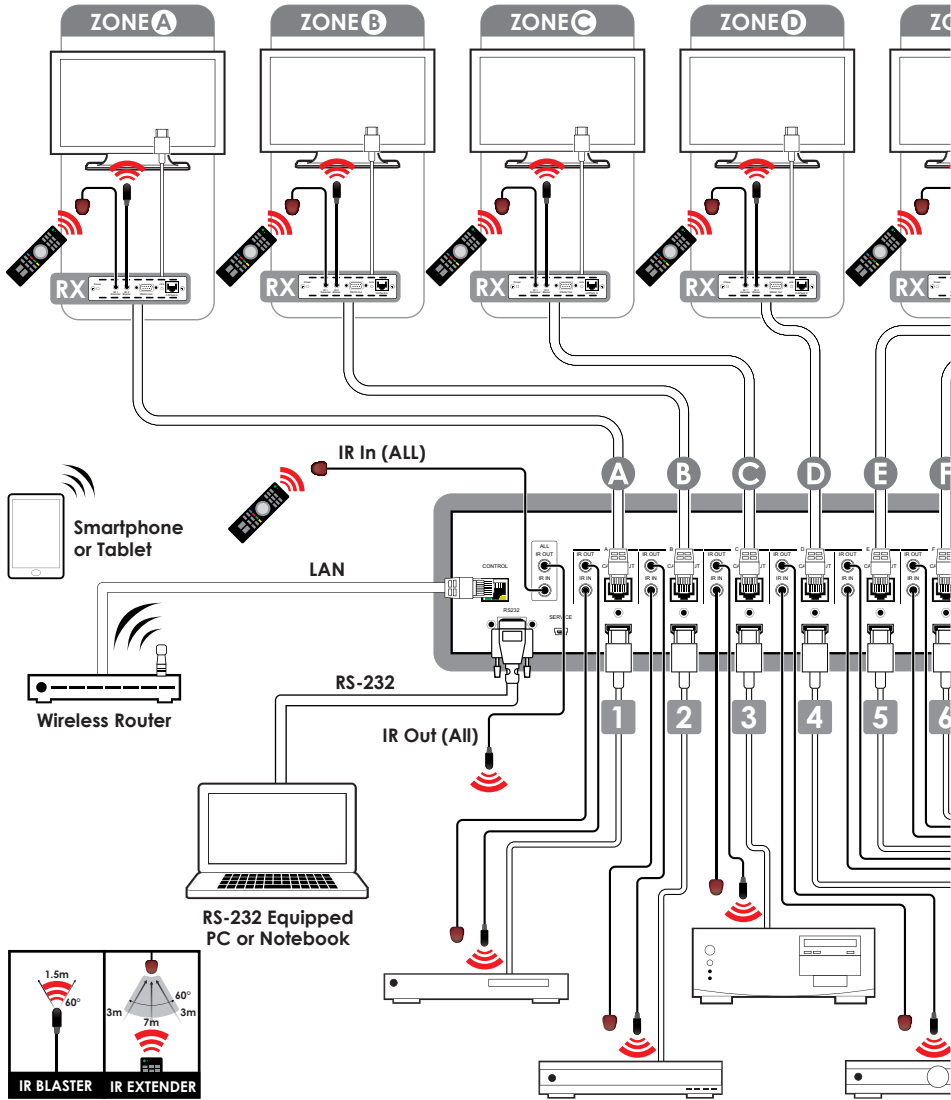Click on the 'Control' tab to control power, input/output ports, EDID and reset mode.

Click 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 WebGUI control will also need to be changed accordingly on the web address entry bar.

7. CONNECTION DIAGRAM

ZONE **E** ZONE **F** ZONE **G** ZONE **H**

Displays

HDMI Outputs
IR In/Out

RX RX RX

Receiver Units

CAT5e/6/7
Cable (60m)

G H

MAIN 24V

7 8

Main Power Supply

HDMI Inputs
IR In/Out

Source
Equipment
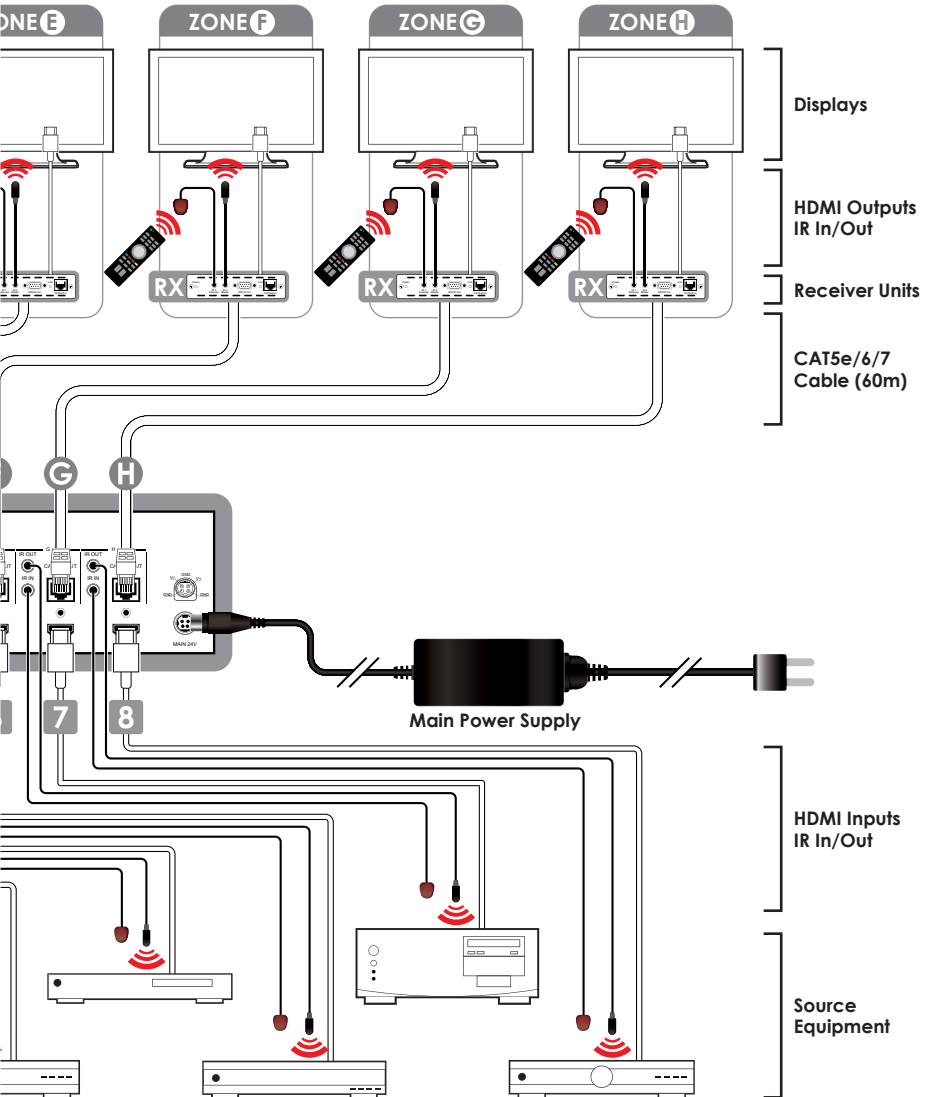
8. SPECIFICATIONS

8.1 Technical Specifications

Video Bandwidth	225 MHz/6.75 Gbps
Input Ports	8×HDMI, 9×IR Extender, 1×RS-232, 1×RJ-45 (Control), 1×Mini USB Type B (For firmware updated only)
Output Ports	8×CAT5e/6/7, 9×IR Blaster
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	4458 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	60.8 W

8.2 CAT5e/6/7 Cable Specification

LENGTH	BANDWIDTH	DATA RATE	SUPPORTED VIDEO
Up to 60 m	Up to 225 MHz	Up to 5.3 Gbps	**HD Video** Up to 1080p@60 Hz/36-bit, 3D (data rate lower than 5.3 Gbps or bandwidth below 225 MHz).
Up to 35 m	Greater than 225 MHz	Greater than 5.3 Gbps	**Ultra HD Video** Up to 4K×2K@30 Hz.

9. ACRONYMS

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