CMSI-8H8HS

8×8 HDMI Matrix

Operation Manual

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	11/11/11	Preliminary Release
RDV2	13/12/11	Power Supply Change
RDV3	15/02/12	LAN Function
VS0	29/03/12	Updated format, diagrams, and statements
RDV4	04/07/12	Control's Function
VS0	24/07/12	Telnet and Web GUI sections updated

CONTENTS

1. INTRODUCTION

The 8×8 HDMI Matrix supports the transmission of Video (up to 1080p Full HD/1920×1200@60Hz) with multichannel digital audio from up to eight high definition sources to up to eight HDMI outputs and allowing any source to be independently displayed on any monitor. Also, the unit can be controlled via IR, RS-232, Telnet or the front panel button controls.

2. APPLICATIONS

- Video/TV wall display
- Commercial advertising and display
- Lecture room display and control
- Hyper market demonstration and control

3. PACKAGE CONTENTS

- 8×8 HDMI Matrix
- 1×24V/6.25A DC Adaptor
- 1×Remote Control
- 1xIR Extender
- 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

5. FEATURES

- HDMI, HDCP 1.1 and DVI compliant
- Supports HDMI features including 3D
- Supports audio sampling rate up to 192 kHz
- Supports resolutions VGA~WUXGA and 480i~1080p dependent upon the output display's EDID settings
- Supports 3D signal display dependent upon the output display's EDID settings
- Supports HDMI input up to 15 meters at 8-bit resolution or 10 meters at 12-bit resolution and HDMI output up to 15 meters at 8-bit/12-bit
- Supports IR extension
- Supports RS-232, remote control, on-panel control and IP Control (Telnet)
- 2U size design

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel
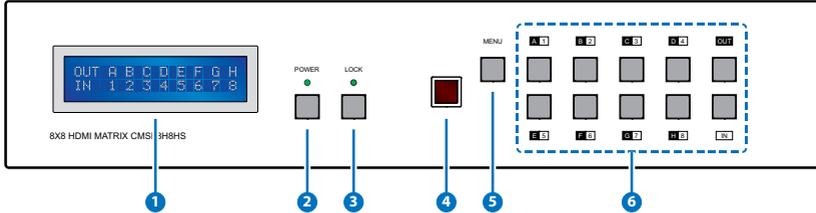
1 **LCM**: Displays the setting information of each input and output setting.

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. The LED will illuminate green 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 are displayed.

Note: For the 'TV' EDID setting, the unit will read and store the EDID information of the display connected to HDMI output A. For the 'STD' EDID setting the unit's built-in EDID setting will be used (1080p@60/12-bit for video and LPCM 2CH for audio).

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
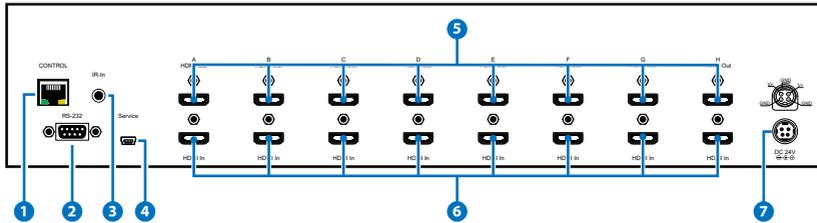
1 **CONTROL:** This port is the link for Telnet control, connect to an active Ethernet link with an RJ45 terminated cable (for further details, please refer to section 6.7).

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

6 **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..

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

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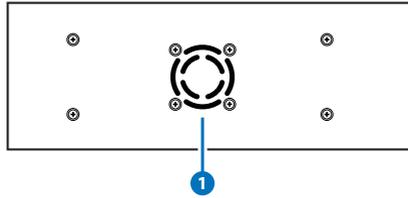
1 **FFan Ventilator:** These are air ventilation areas, DO NOT block these areas or cover it with any object. Please allow adequate space around the unit for air circulation.

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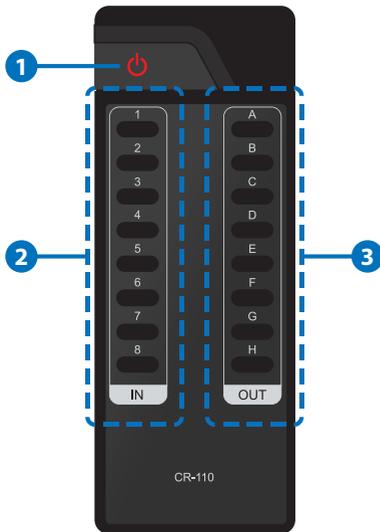
1 **POWER:** Press this button to switch on the device or set it to standby mode.

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

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

6.5 RS-232 Pin Assignment

CMSI-8H8HS		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

6.6 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 not case-sensitive.

6.7 Telnet Control

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

Note: Please do not connect both the Matrix and the PC/Laptop with a single CAT5e/6 cable as it will not access the telnet function.

To access the telnet control in Windows 7, click on the 'Start' menu and type "cmd" in the Search field then press enter.

Under Windows XP go to the 'Start' menu and click on "Run", type "cmd" with then press enter.

Under Mac OS X, go to Go→Applications→Utilities→Terminal
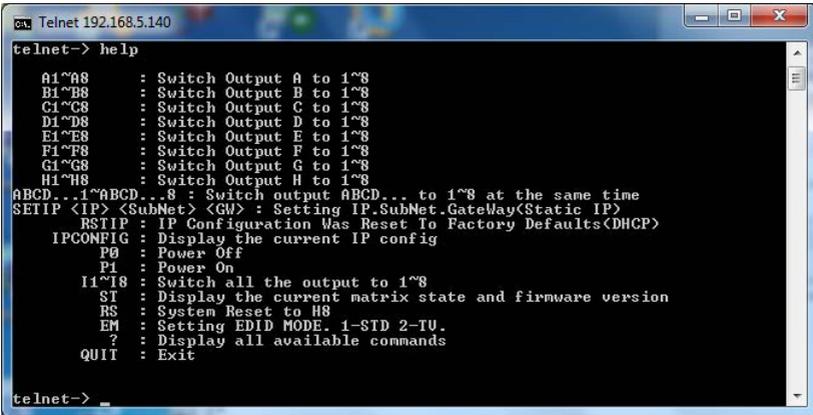
See below for reference.

Once in the command line interface (CLI) type "telnet", a space, then the IP address of the unit you wish to control, a space 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.
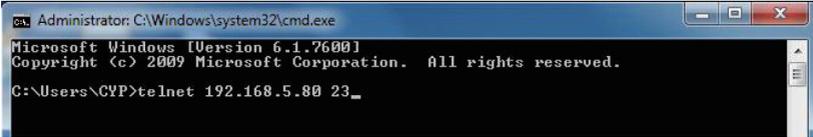
This will bring us into the device which we wish to control. Type "HELP" to list the available commands.

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.

7. CONNECTION DIAGRAM

Displays

HDMI Outputs

Router or
Wireless
Router

**RS-232 Equipped
PC or Notebook**

A B C D E F G H

8x8 HDMI
Matrix

1 2 3 4 5 6 7 8

HDMI Inputs

**Source
Equipment**
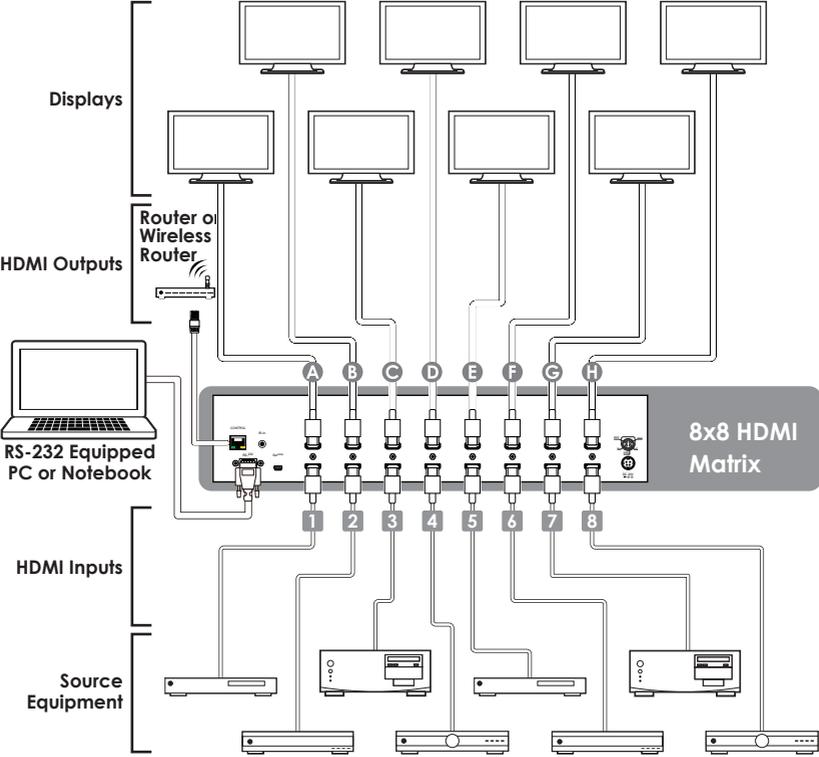
8. SPECIFICATIONS

Video Bandwidth	255 MHZ/6.75 GBPS
Input Ports	8×HDMI, 1×RS-232, 1×IR Receiver, 1×Mini USB Type B (For firmware update only), 1×RJ-45
Output Ports	8×HDMI
HDMI Input Cable Distance	15m/8-bit, 10m/12-bit
HDMI Output Cable Distance	15m/8-bit ,15m/12-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	4278 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	48 W

9. ACRONYMS

ACRONYM	COMPLETE TERM
DTS	Digital Theater System
DVI	Digital Theater System
EDID	Extended Display Identification Data
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