SOLUTIONS FOR GROWTH

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nT15GX01 | CMSI-8D8DSA

8×8 DVI Matrix with Audio

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	05/03/12	Preliminary Release
RDV2	10/07/12	Control's Function
VS0	23/07/12	Telnet and Web GUI sections updated
RDV3	04/10/12	Add Web GUI page
RDV4	04/06/13	RS-232 & Telnet's SetIP Command

CONTENTS

1. INTRODUCTION

The 8×8 DVI Matrix with Audio is the perfect choice for the switching and distribution of DVI sources. Connect up to eight DVI sources to eight DVI displays allowing any source to be independently displayed on any monitor. Each DVI input and output has a corresponding 3.5mm mini-jack connection allowing for audio to be distributed. The Matrix can be controlled via its front panel, IR, RS-232 or Telnet and Web GUI over IP.The matrix supports a full range of PC and HDTV timings up to WUXGA and 1080p, 2.25Gbps bandwidth, 12-bit Deep Color, and 3D.

2. APPLICATIONS

- Commercial computer display matrixing
- Commercial advertising display
- University lecture hall display
- Retail sales demonstration

3. PACKAGE CONTENTS

- 8×8 DVI Matrix with Audio
- 1×24V/6.25A DC Adaptor
- 1×Remote Control
- 1×IR Extender
- Operation Manual

4. SYSTEM REQUIREMENTS

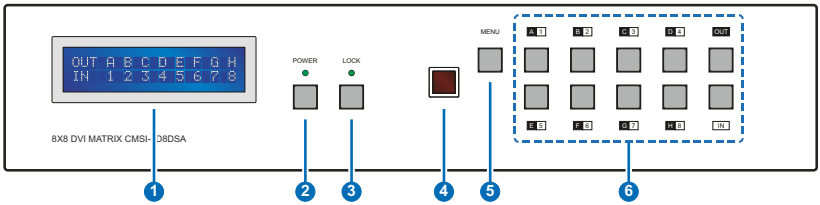
- DVI source with DVI connection cables and output DVI displays with DVI connection cables
- Analog audio output, such as AV receivers with 3.5mm mini-jack cables

5. FEATURES

- HDMI, HDCP 1.1 and DVI compliant
- Supports HDMI 3D feature (with HDMI to DVI adaptor cable)
- Supports resolutions to VGA ~ WUXGA and 480i~1080p dependent upon the output display's EDID settings
- Supports stereo audio input and output via 3.5mm mini-jack cable
- Supports 3D signal dependent upon the output display's EDID settings
- Supports IR extension
- Supports RS-232, remote control, on-panel control and IP Control (Telnet & Web GUI)
- 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 once to select EDID setting from STD (internal) 1 or TV (external) 2 then press it again to confirm the selection. Press this button every to confirm the selection.

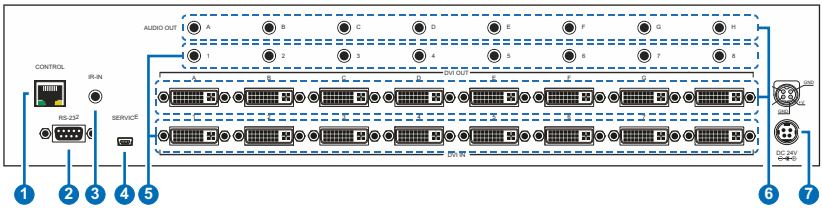
   Note: For the 'TV' EDID setting, the unit will read and store the EDID information of the display connected to HDMI output A. For the 'STD' EDID setting the unit's built-in EDID setting will be used (1080p@60/12-bit for video and LPCM 2CH for audio).
6. **1~8/A~H and IN/OUT:** Press the OUT or IN button 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.

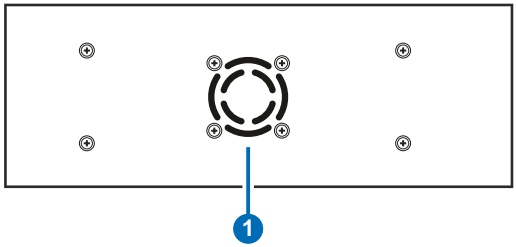
   Note: If the MENU button is not pressed the selection will not be changed.

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 6.7 & 6.8).
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. **DVI IN 1~8 with Audio:** Connect to DVI sources such as PC/Laptop or DVD/Blu-ray player with HDMI to DVI adaptor cables. Connect the audio input to the source with 3.5mm mini-jack cables
6. **DVI OUT A~H with Audio:** Connect to a DVI equipped TV/monitor for display of the DVI input source signal. Connect the audio outputs to AV receivers or active speakers with 3.5mm mini-jack cables
7. **DC 24V:** Plug the supplied 24 V DC power supply into the unit and connect the adaptor to an AC outlet.

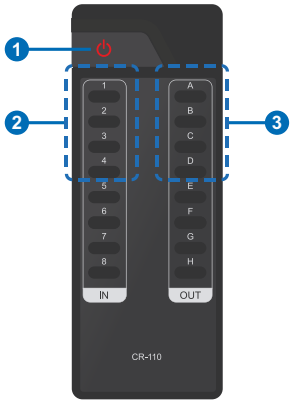
6.3 Side Panel



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 port selection 1~8.
3. **OUT:** Output port selection A~H.



6.5 RS-232 Pin Assignment

CMSI-8D8DSA			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
Flow Control: None
Stop Bit: 1-bit

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
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 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

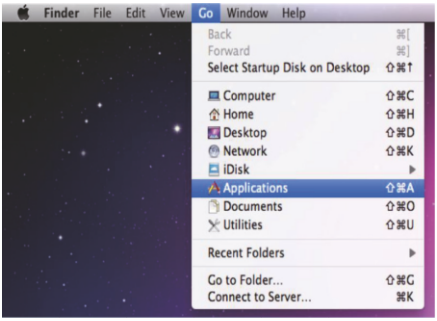
Before attempting to use the telnet control, please ensure that both the Matrix (via the 'LAN /CONTROL' port) and the PC/Laptop are connected to the active networks.

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.

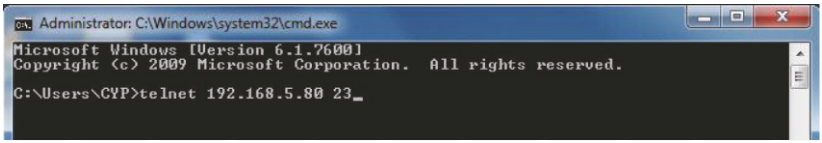
Under Mac OS X, go to Go→Applications→Utilities→Terminal

See below for reference.

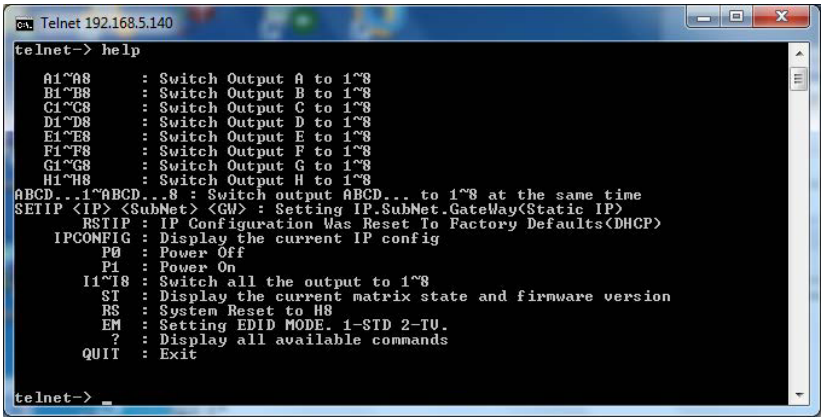


Once in the command line interface (CLI) type "telnet", then the IP address of the unit you wish to and "23", then hit enter.

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.

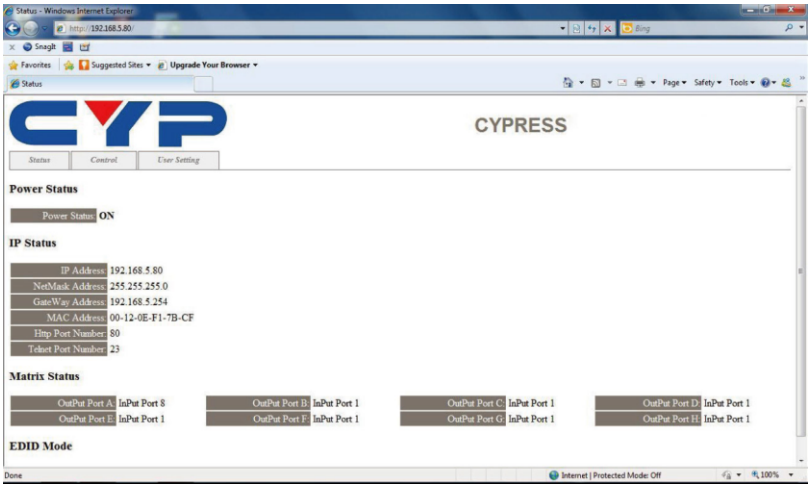


Type “IPCONFIG” To show all IP configurations. To reset the IP, type “RSTIP” and to use a set static IP, type ”SETIP” (For a full list of commands, see Section 6.7).

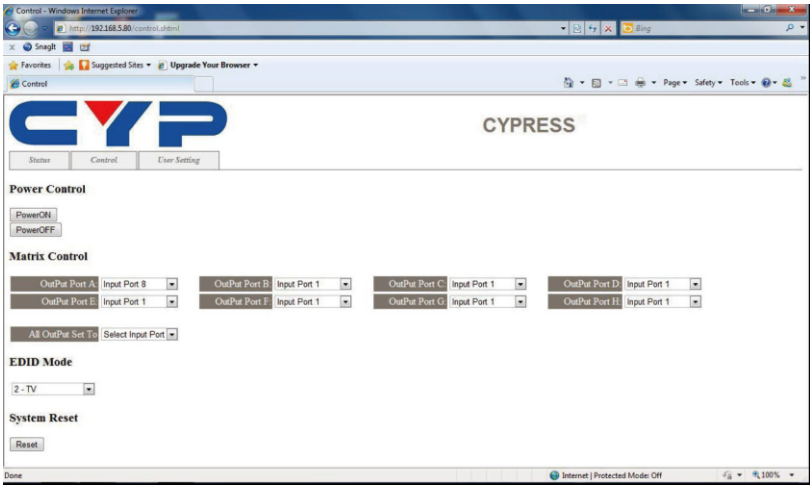
Note: Any commands will not be executed unless followed by a carriage return. Commands are not case-sensitive. If the IP is changed then the IP Address required for Telnet access will also change accordingly.

6.8 Web GUI Control

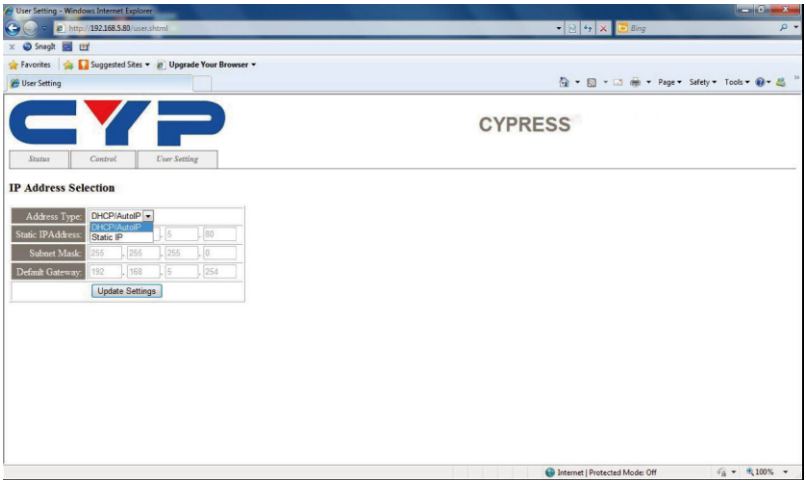
On a PC/Laptop that is connected to the same active network as the Matrix, open a web browser and type device's IP address on the web address entry bar. The browser will display the device's status, control and User setting pages.



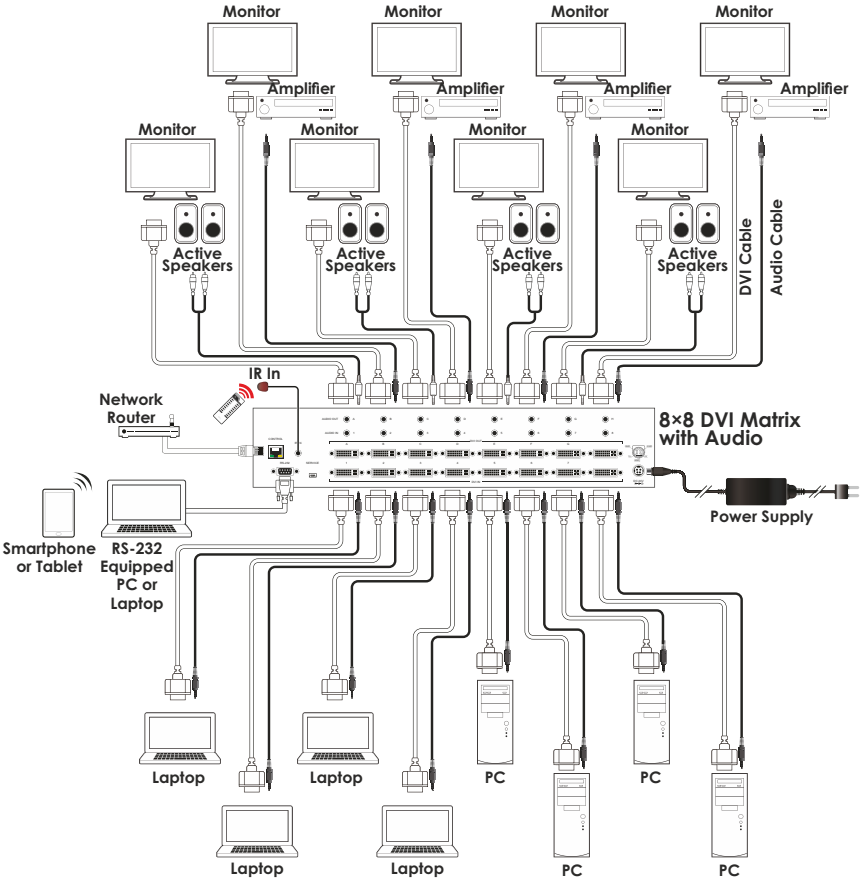
Click on the 'Control' tab to control power, input/output ports, EDID and reset mode.



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



8. SPECIFICATIONS

Video Bandwidth	225MHz/6.75 Gbps
Input Ports	8×DVI, 8×3.5mm Mini-jack, 1×IR, 1×RS-232, 1×mini USB Type B (For firmware update only), 1×RJ-45 (CONTROL)
Output Ports	8×DVI , 8×3.5mm Mini-jack
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	438 mm (W)×255 mm (D)×93 mm (H)
Weight	4648 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	51 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
VGA	Video Graphics Array
WUXGA	Wide Ultra Extended Graphics Array

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