CYP

CDPS-14TW
HDMI 1x4 TV Wall

Operation Manual

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Version 1.0 October 2014

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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	09/12/14	Preliminary Release

CONTENTS

1. INTRODUCTION

The 1 by 4 HDMI TV Wall allows an HDMI input source to be freely arranged on 4 displays (TV or monitor) and or cascade to extend the HDMI signal up to as many as needed with bezel correction function. Friendly control application that leads user with single or total devices control over a one touch button and leave the TV Wall control system never been easier. The device supports video timings up to WUXGA@60RB and 1080p@60Hz, audio format up to 7.1CH LPCM at 192kHz sampling rate based on input source EDID. All the operation and control can be done through Telnet and RS-232.

2. APPLICATIONS

- Hypermarket display
- Public advertisement
- Digital Presentation
- Stock Market

3. PACKAGE CONTENTS

- 1 x 4 by 4 HDMI TV Wall
- 1 x 12V/3A DC Power Adaptor
- Operation Manual

4. SYSTEM REQUIREMENTS

Input source equipment such as DVD/Blu-ray players or any HDMI signal and output HD TV/displays.

5. FEATURES

- HDMI, HDCP1.4 and DVI compliant
- Output source signal to 4 displays (2 by 2 Video wall) as a full image with adjustable Bezel Correction
- Cascade/Bypass the HDMI signal up to as many as require
- One button push to control all connected TV Wall devices
- Supports RS232 and Telnet controls
- Input resolutions support VGA~WUXGA and 480i~1080p
- Output resolutions support 720p~1080p
- Supports different input resolution and output resolution selectable from OSD menu. The factory default value for the output resolution is 720p@60Hz/ 2CH LPCM
- Audio supports LPCM 2CH, 5.1CH, 7.1CH/AC3/DTS/Dolby Digital Plus/Dolby TruHD & DTS-HD
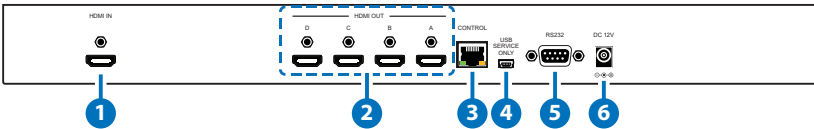
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel

POWER

1X4 TV WALL CDPS-14TW

1

1 **Power**
- ON/OFF: Press this button to power ON the device or set it to standby mode.
- Factory default: Under Power On status, press this button for 3 sec. to reset the system back to factory default setting.

6.2 Rear Panel

HDMI IN   HDMI OUT   CONTROL   USB   RS232   DC 12V
                D C B A   SERVICE
                                      ONLY

1   **2**   **3** **4** **5**   **6**

1 **HDMI IN**

Connect with HDMI source equipment such as DVD/Blue-ray players and or PC/Laptop devices.
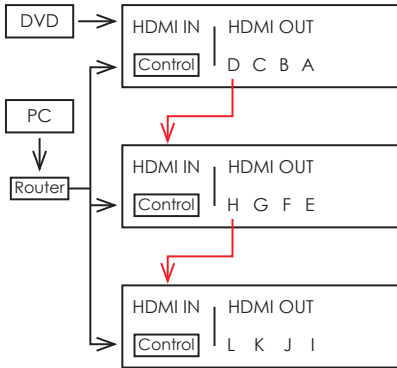
2 **HDMI OUT A~D**

Connect with HDMI TV/displays for output image display. It is suggest that the connection sequence should be placed as diagram showed for TV wall set up. Output D is the nominated port for cascading/Bypass the HDMI signal.

| DVD → | HDMI IN | HDMI OUT |
| PC → | Control | D C B A |

Display 2X2

| A | B |
| C | D |

```
DVD →  ┌─────────────────────────┐        Display
       │ HDMI IN │ HDMI OUT      │          3X2
       │ Control │ D  C  B  A    │    ┌──────┬──────┬──────┐
       └─────────────────────────┘    │      │      │      │
PC                                    │  A   │  B   │  C   │
│                                     │      │      │      │
↓      ┌─────────────────────────┐    ├──────┼──────┼──────┤
Router │ HDMI IN │ HDMI OUT      │    │      │      │      │
       │ Control │ H  G  F  E    │    │  E   │  F   │  G   │
       └─────────────────────────┘    └──────┴──────┴──────┘
```

```
DVD →  ┌─────────────────────────┐        Display
       │ HDMI IN │ HDMI OUT      │          3X3
       │ Control │ D  C  B  A    │    ┌──────┬──────┬──────┐
       └─────────────────────────┘    │  A   │  B   │  C   │
PC                                    ├──────┼──────┼──────┤
│      ┌─────────────────────────┐    │  E   │  F   │  G   │
↓      │ HDMI IN │ HDMI OUT      │    ├──────┼──────┼──────┤
Router │ Control │ H  G  F  E    │    │  I   │  J   │  K   │
       └─────────────────────────┘    └──────┴──────┴──────┘

       ┌─────────────────────────┐
       │ HDMI IN │ HDMI OUT      │
       │ Control │ L  K  J  I    │
       └─────────────────────────┘
```
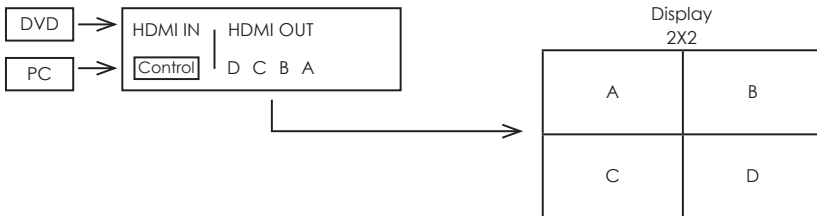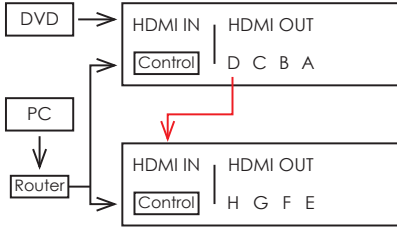
❸ Control

Connect to an active network for telnet control (Please refer to 6.5 telnet Commands).

❹ USB SERVICE ONLY

This slot is reserved for factory use only.

❺ RS-232

Connect from PC/Laptop with D-Sub 9pin cables for RS-232 command sending and controlling over the device.

Note: RS-232 control system is only limited for single device.

❻ DC 12V

Plug the 12V DC power supply into the unit and connect the adaptor to an AC outlet.

6.3 RS-232 Protocols

CDPS-14TW			Remote Controller(PC)	
PIN	Definition		PIN	Definition
1	NC		1	NC
2	TxD		2	RxD
3	RxD		3	TxD
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: 115200bps

Data Bit: 8 bits

Parity: None

Flow Control: None

Stop Bit: 1

6.4 RS-232 & Telnet Commands

Item	Command	Description	Parameter
Resolution	RRES	Request Resolution	0=480p, 1=576p, 2=720p50, 3=720p60, 4=1080p24, 5=1080p25, 6=1080p30, 7=1080p50, 8=1080p60, 9=1024x768 60
	SRES 0~18	Set Resolution	10=1280x800 60, 11=1280x1024 60, 12=1366x768 60, 13=1440x900 60, 14=1600x900 60, 15=1600x1200 60
			16=1680x1050 60, 17=1920x1200 60, 18=**Native**
OSD	ROSDD	Request OSD Status	0=**OFF**, 1=ON
	SOSDD 0/1	Set OSD Status	
	ROSDH	Request OSD H Position	0~20 **(5)**
	SOSDH 0~20	Set OSD H Position	
	ROSDV	Request OSD V Position	0~20 **(5)**
	SOSDV 0~20	Set OSD V Position	

Item	Command	Description	Parameter
	ROSDT	Request OSD Display Timeout setting	0~20 **(50)**
	SOSDT 2~50	Set OSD Display Timeout in Second	
	ROSDG	Request OSD Gain Correction	0~10 **(2)**
	SOSDG 0~10	Set OSD Gain Correction	
	SOSDI	Set OSD Information Status	ON/OFF
	SOSDR	OSD reset to factory default "off"	
IMAGE	RBRI 1~4	Request Brightness	Output 1~4
	SBRI 1~4 0~100	Set Brightness	Output 1~4, Brightness Value 0~100 **(50)**
	RCON 1~4	Request Contrast	Output 1~4
	SCON 1~4 0~100	Set Contrast	Output 1~4, Contrast Value 0~100 **(50)**
	RSAT 1~4	Request Saturation	Output 1~4
	SSAT 1~4 0~100	Set Saturation	Output 1~4, Saturation Value 0~100 **(50)**
	RHUE 1~4	Request Hue	Output 1~4

Item	Command	Description	Parameter
	SHUE 1~4 0~100	Set Hue	Output 1~4, Hue Value 0~100 **(50)**
	SIMRE 1~4	Reset Picture Setting	1->Brightness,2->Contrast,3->Saturation,4->Hue
	SPIRE	Reset All Picture Setting	
Ethernet	RIPM SIPM 0/1	Request IP Mode Set IP Mode	**0->DHCP,** 1->Static
	RIPA	Request IP Address	IP ADDR : IPA3.IPA2.IPA1.IPA0
	SIPA 0~255. 0~255. 0~255. 0~255	Set IP Address	IP ADDR : IPA3.IPA2.IPA1.IPA0
	RMAA	Request Mask Address	Mask ADDR : MAA3.MAA2.MAA1.MAA0
	SMAA 0~255. 0~255. 0~255. 0~255	Set Mask Address	Mask ADDR : MAA3.MAA2.MAA1.MAA0

Item	Command	Description	Parameter
	RGAA	Request Gateway Address	Gate ADDR : GAA3.GAA2. GAA1.GAA0
	SGAA 0~255. 0~255. 0~255. 0~255	Set Gateway Address	
	RETIME	Request Ethernet Timeout	**0=OFF**, 1=10min, 2=20min, 3=30min, 4=40min, 5=50min, 6=60min
	SETIME 0~6	Set Ethernet Timeout	
	RLINK	Read Link	IP000~255 IP010~255 IP020~255 IP030~255 MA000~255 MA010~255 MA020~255 MA030~255 GA000~255 GA010~255 GA020~255 GA030~255
System	RMUTE	Request	0=UNMUTE, 1=MUTE
		Mute Status	
	SMUTE 0/1	Set Mute Status	

Item	Command	Description	Parameter
	RPOW	Request Power Status	0=Power off, 1=Power on
	SPOW 0/1	Set Power Status	
	RVER	Request Version	
	SREL	Set Re-Link	
	SDEF	Reset to factory default	
	RMNC 1~4	Request TV Wall Value	TV WALL M Value
	SMNC M N 0~4	Set TV Wall Output Value	TV WALL N Value Output 1~4
	RCO 1~4	Request Output TV Wall Position	Output 1~4
	SCO 1~4 Y	Set Output TV Wall Position	Output 1~4, TV Wall position(M*N)
	RCBH 1~4	Request H Bezel Value	Output 1~4
	SCBH 1~4 0~255	Set Output H Bezel Value	Output 1~4, H Bezel value
	RCBV 1~4	Request V Bezel Value	Output 1~4
TV WALL	SCBV 1~4 0~255	Set Output V Bezel Value	Output 1~4, V Bezel value

Item	Command	Description	Parameter
TV WALL	RBEZ	Request Bezel Status	0=Bezel off, 1=Bezel on
	SBEZ 0/1	Set Bezel Status	
	RMDN	Request Device's Model No.	Unit model NO. Setting be 1~255
	SMDN 0~255	Set Device's Model No.	
	SWDE	Reset TV Wall Value	
	SHOT 0~23	Set Hot Setting	**0=1x1**, 1=2x2, 2=3x3, 3=4x4, 4=5x5, 5=6x6, 6=2x3, 7=3x2, 8=3x4, 9=4x2, 10=4x3, 11=4x5, 12=1x2, 13=2x1, 14=1x3, 15=3x1, 16=1x4, 17=4x1, 18=2x4, 19=3x5, 20=5x4, 21=5x3, 22=6x2, 23=6x3
	SFAVE 1~5	Save Favor Setting	
	RFAVE 1~5	Recall Favor Setting	
	RBY	Request Bypass Setting	0=non Bypass, **1=Bypass**
	SBY 0/1	Set Bypass Setting	

*All commands will be not executed unless followed with a carriage return (0x0D) and commands are case-sensitive.

*RS-232 control is set to single device only, not for use with Cascade/Bypass output's connection device.

*Bold values are the default setting.

6.5 Software Application Installation

Use the link http://cypress.com.tw to download the software application TV Wall Set v1.09 and execute it to control the TV Wall system.

Note: Before installing, remove any former verion that was existing.

Once the application is installed successfully, click and open the "TV Wall Set".
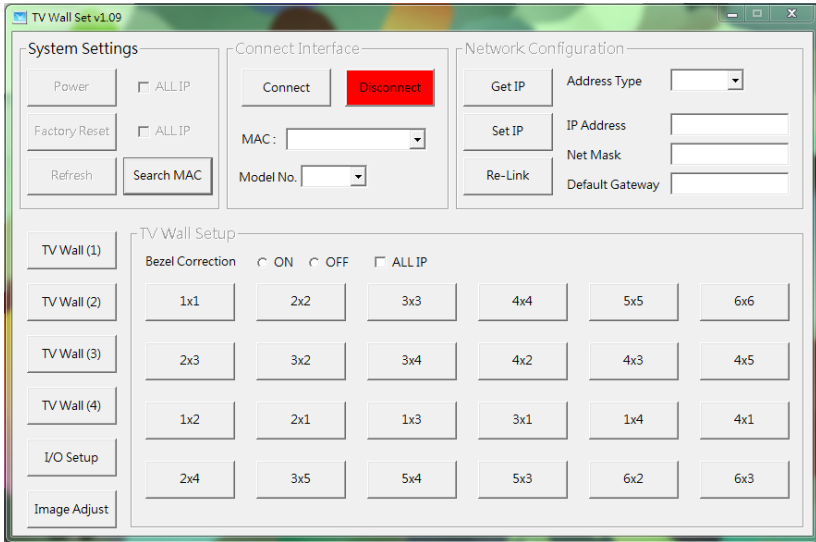
1. Every time when the TV Wall device is power or reset with network connection, click on "Search MAC" to confirm the total TV Wall device within the network system.

6.6 TV Wall Functions
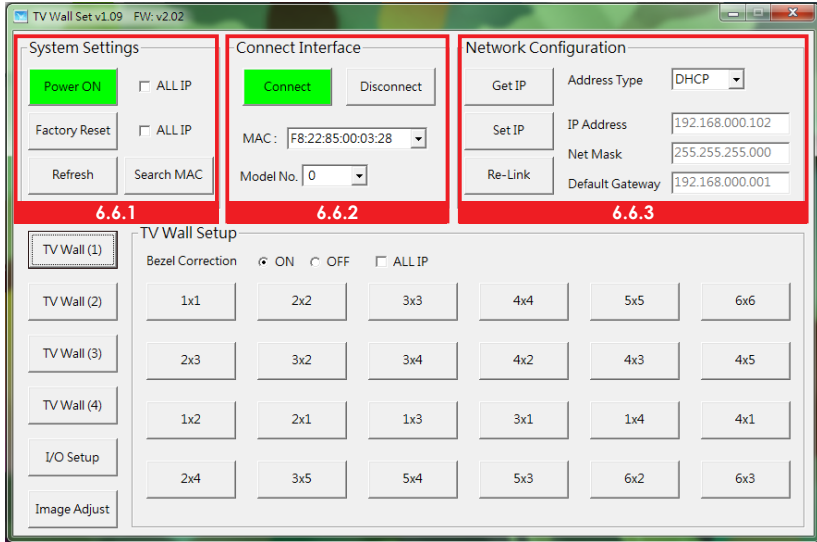
6.6.1 System Settings

1. Click "Power ON" to switch ON the device, to switch all devices ON click ALL IP and then "Power ON".

2. Click "Factory Reset" to set the device's setting back to default, to switch all devices back to default setting click ALL IP and then "Factory Reset".

3. Select from MAC a device and click "Connect" to control the device. Once the "Connect" button is clicked the setting will be refreshed except Image Adjust.

4. Click "Search MAC" to define on-line TV Wall devices.

6.6.2 Connect Interface

1. Click on "Connect" to make the link and the TV Wall Set will refresh automatically yet the Image Adjust can only be refreshed by clicking the button.

2. Click on "Disconnect" to terminate the link between TV Wall device and the TV Wall Set.

3. Click on the arrow down button of MAC to show the TV Wall devices and select the nominated device/MAC for connection.

4. When more than one TV Wall device is in use, set "Model No." is a

must in order to split and arrange the image correctly.

6.6.3 Network Configuration

1. Click on "Get IP" to get the current IP link status.
2. Click on "▼" button to change address type.
3. To change IP address, click on "Set IP" and insert direction on IP address, Net Mask and Default Gateway address bar.
4. When Set IP is done, click on "Re-link" to reset the IP address.

6.6.4 TV Wall (1)
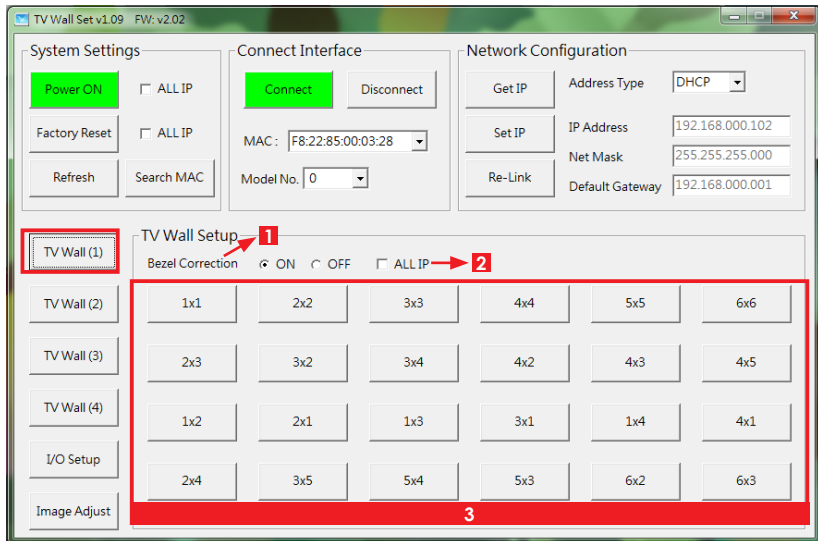
1. Bezel Correction ON/OFF allows TV Wall's image to be adjust to fit the display and look better as in one or without any adjustment and split the image evenly.
2. Click on ALL IP to allow Bezel Correction to perform on all TV Wall devices.
3. Fast TV wall setting buttons.

6.6.5 TV Wall (2)
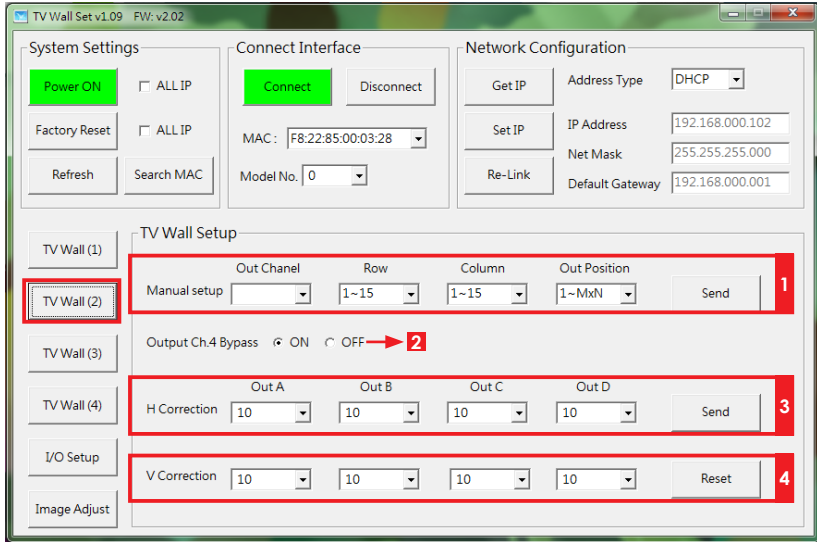
1. Output Chanel setup allows user to set up individual output A~D on a specific position and from horizontal and vertical position of 1~15.

2. Output Ch.4 Bypass On/Off allows the TV Wall device's output D to be set to signal bypass mode or not.

3. H Correction allows output horizontal position's display to be adjust with Bezel value.

4. V Correction allows output vertical position's display to be adjust with Bezel value.

6.6.6 TV Wall (3)
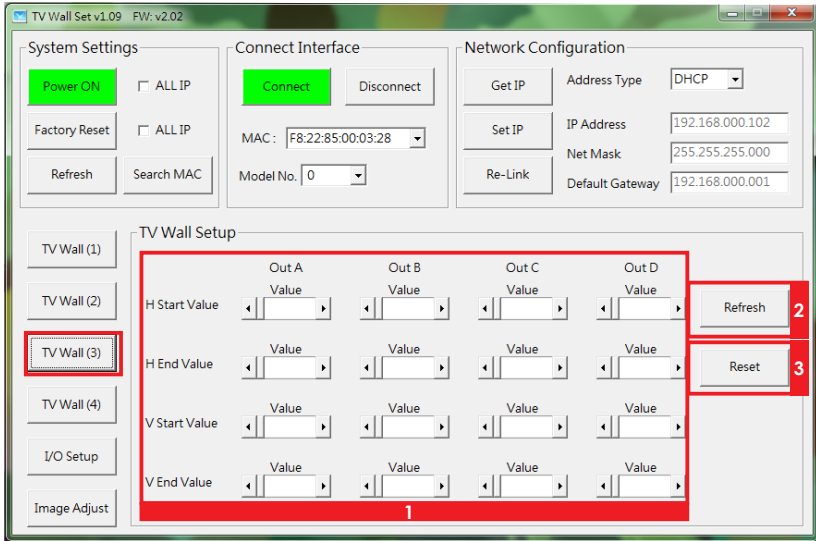
1. Output H&V Value setup allows user to adjust individual output A~D on a specific position and from horizontal and vertical position of 0~255.

2. Refresh button is to refresh I/O Setup page only.

3. Reset button is to reset all settings of I/O Setup back to factory default value.

6.6.7 TV Wall (4)
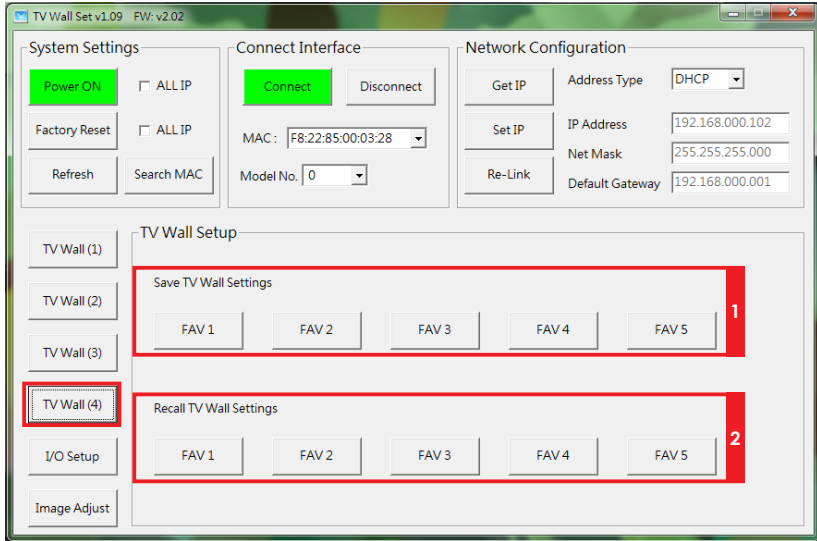
1. Save TV Wall Settings from FAV 1~5 with current settings, after setting TV Wall (2)'s figure click from FAV 1~5 in TV Wall (3) to store the setting.

2. Recall TV Wall Settings from FAV 1~5 to switch the setting immediately.

6.6.8 I/O Setup
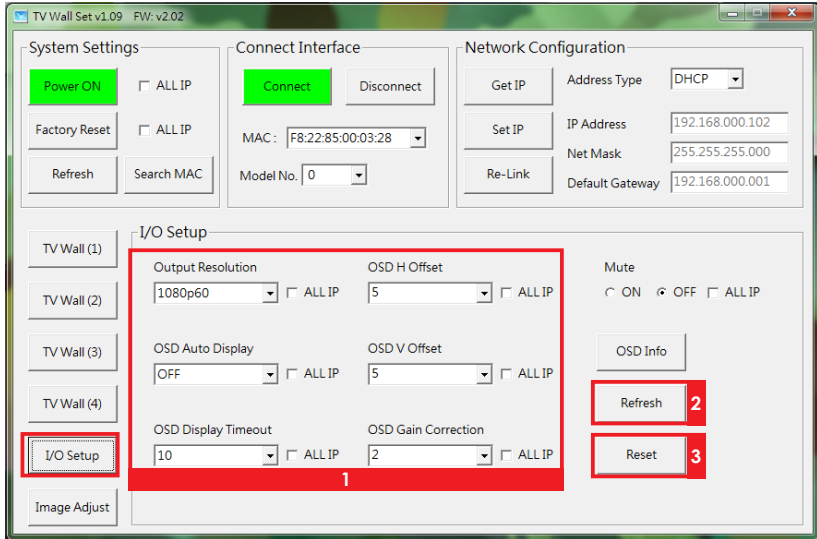
1. All settings under I/O Setup can be done with single TV Wall device or multiple TV Wall devices with single click on "ALL IP". Parameter and default value are as stated in RS-232 description.

2. Refresh button is to refresh I/O Setup page only.

3. Reset button is to reset all settings of I/O Setup back to factory default value.

6.6.9 Image Adjust
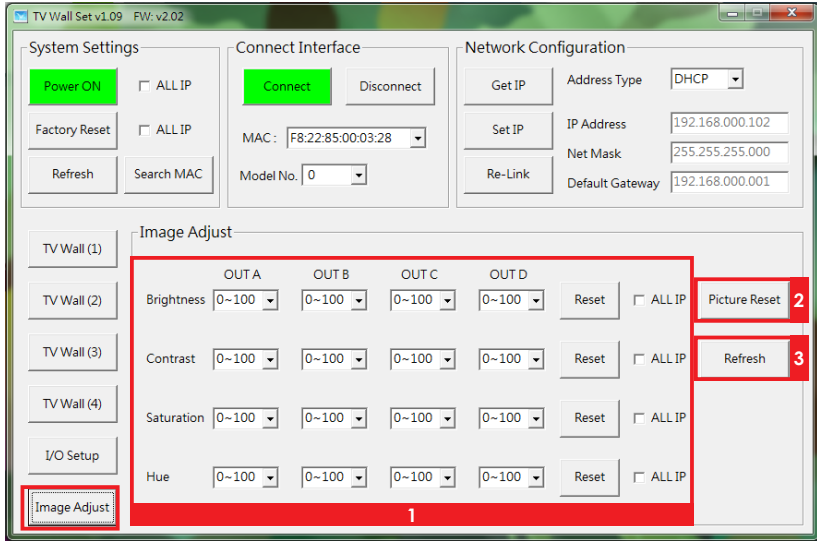
1. Again all settings under Image Adjust can be done with single TV Wall device or multiple TV Wall devices with single click on "ALL IP". Parameter and default value are as stated in RS-232 description.

2. Picture Reset button is to reset all settings of Image Adjust back to factory default value.

3. Refresh button is to refresh Image Adjust page only.

6.7 Telnet Control

Before attempting to use the telnet control, please ensure that both the HDMI TV Wall (via the '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.
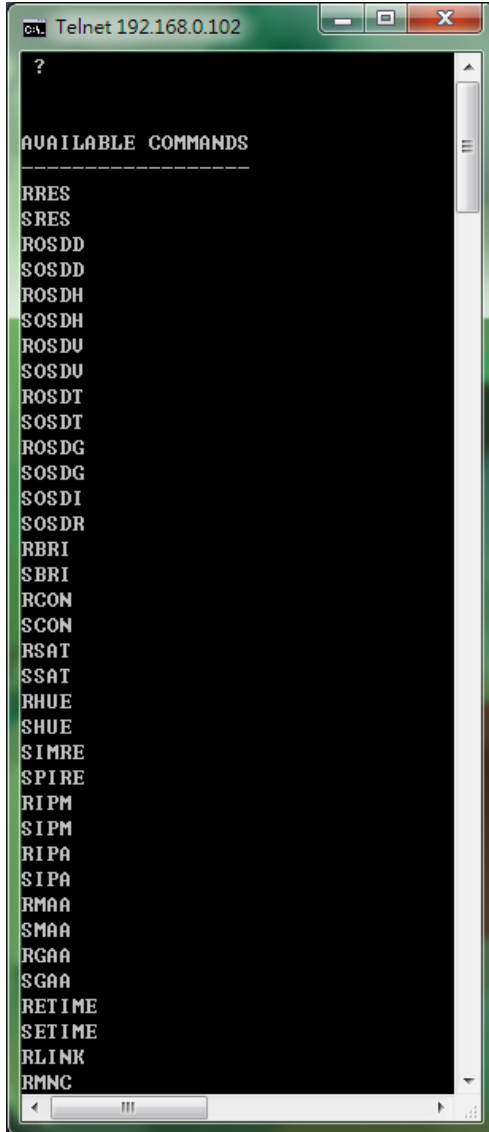
Under Mac OS X, go to Go→Applications→Utilities→Terminal See below for reference.
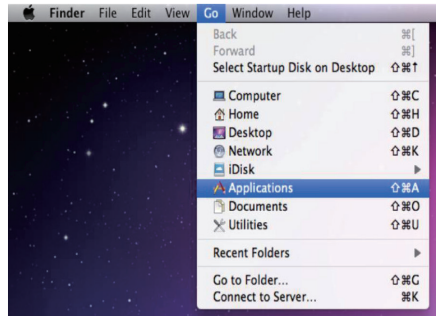
Once in the command line interface (CLI) type "telnet", then the "IP address" of the unit and hit enter. Only when the Telnet port (device port) is not set to 23, the number "(device port)"" then needs to be entered after IP address (device IP) and before hit enter.
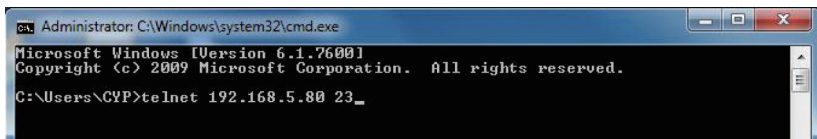
This will bring us into the device which we wish to control. Type "HELP" to list the available commands.

```
?


AVAILABLE COMMANDS
——————————————————
RRES
SRES
ROSDD
SOSDD
ROSDH
SOSDH
ROSDU
SOSDU
ROSDT
SOSDT
ROSDG
SOSDG
SOSDI
SOSDR
RBRI
SBRI
RCON
SCON
RSAT
SSAT
RHUE
SHUE
SIMRE
SPIRE
RIPM
SIPM
RIPA
SIPA
RMAA
SMAA
RGAA
SGAA
RETIME
SETIME
RLINK
RMNC
```

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

7. SPECIFICATIONS

Video Bandwidth	225MHz/6.75Gbps
Input ports	1x HDMI (Female type)
	1xUSB (Service only)
Output ports	4 x HDMI (Female type)
HDMI Cable Distance	15M/8-bit 1080p
Sampling Rate	192kHz
ESD Protection	Human body model:
	± 8kV (air-gap discharge)
	± 4kV (contact discharge)
Power Supply	12V/3A DC (US/EU standards, CE/FCC/ UL certified)
Dimensions (mm)	436(W) x 249(D) x 44(H)/Jacks Excluded
	436(W) x 256(D) x 49(H)/Jacks Included
Weight (g)	2815
Chassis Material	Aluminum
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	12.3w

8. TIMING

8.1 Input Support Timing

Support Timing
480i@59
480p@60
576i@50
576p@50
720p@50,60,
1080i@50,60
1080p@24, 50,60
640x480@60,72,75,85
800x600@56,60,72,75,85
1024x768@60,70,75,85
1280x768@60,75
1280x1024@60,75
1360x768@60
1366x768@60
1600x1200@60
1920x1200@60

8.2 Output Support Timing

Support Timing	
720p50	1280x800@60
720p60	1280x1024@60
1080p24	1366x768@60
1080p25	1440x900@60
1080p30	1600x900@60RB
1080p50	1600x1200@60
1080p60	1680x1050@60
1024x768@60	1920x1200@60RB

9. CONNECTION AND INSTALLATION

DVD/Blu-ray Player   **2x2 TV Wall**

TV/Monitor

PC/NB

DVD/Blu-ray Player

3x2 TV Wall

TV/Monitor

Modem or Router
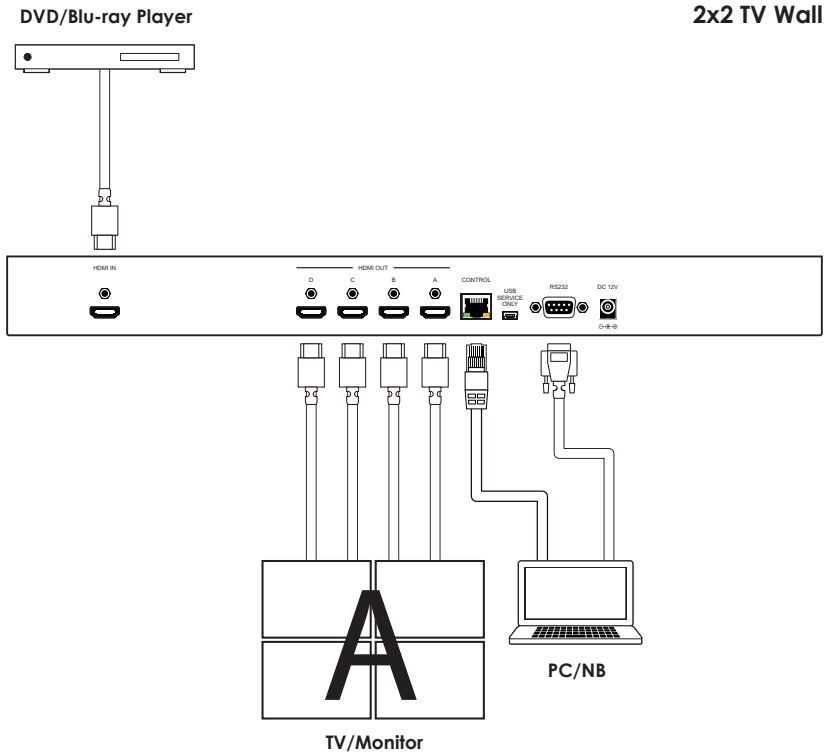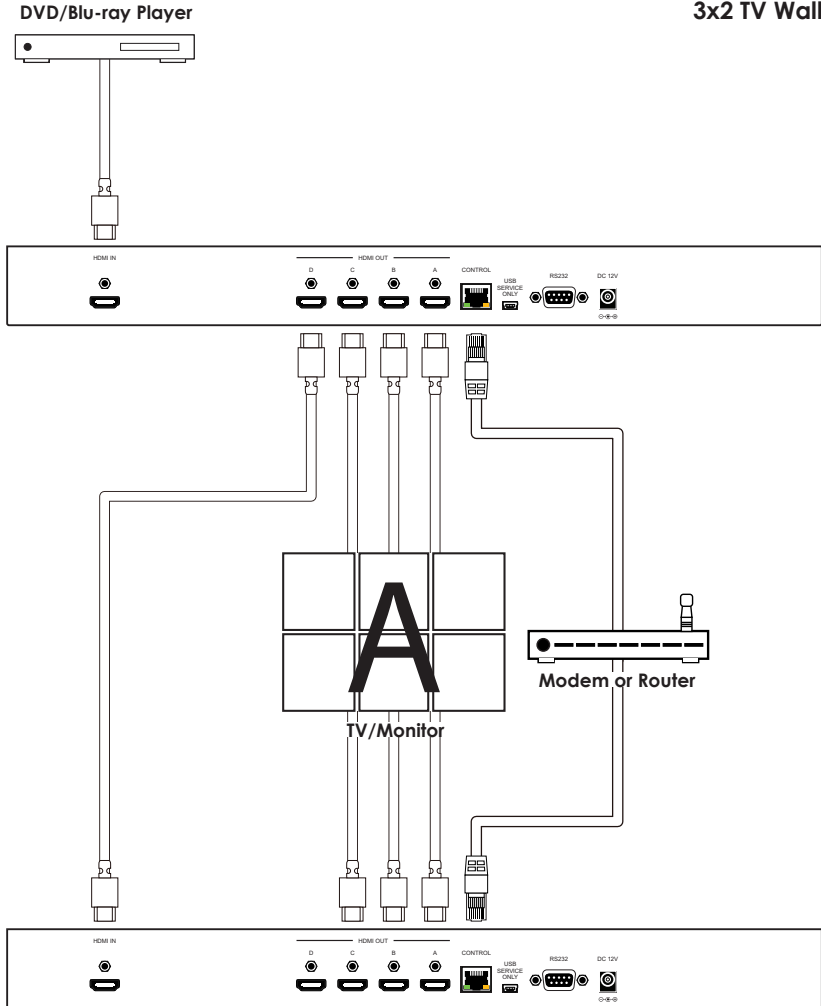
10. ACRONYMS

ACRONYM	COMPLETE TERM