CYP ///

4K2K

DS-MSC14-4K

1 to 4 Multi-screen Controller with 4K Input Support

/// **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	SUMMARY OF CHANGE
v1.00	10/06/2015	First release

CONTENTS

1. INTRODUCTION

The DS-MSC14-4K enables a 4K video wall to be created from any third party screens, the HDMI source can be displayed as a single image on each screen or 1 image across all screens. A single unit will create a 2x2 video wall. Multiple units can be combined with an HDMI distribution amp to create larger video wall configurations. Control is via RS-232, Telnet IP and our downloadable application which will allow full control of the DS-MSC14-4K from adjusting the bezel correction to pre-set video wall layouts.

2. APPLICATIONS

/// Video Wall Presentation

/// Public Advertisement

/// Digital Presentation

/// Stock Market Displays

3. PACKAGE CONTENTS

/// 1× 1 by 4 HDMI 4K UHD TV Wall Splitter

/// 1× 12 V/3 A DC Power Adaptor

/// 1× Operation Manual

4. SYSTEM REQUIREMENTS

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

5. FEATURES

/// Adjustable Bezel correction

/// The DS-MSC14-4K can be combined together using a HDMI splitter allowing the creation of larger video walls.

/// Video wall configurations can be pre-loaded into the our control application allowing simple switching between the video wall layouts.

/// One button push control allows one command to be executed to all connected devices e.g instructing all the screens to show one image per screen.

/// The DS-MSC14-4K can be controlled via RS-232, Telnet IP control or our piece of control software which can be found on the downloads tab of the website.

/// Supported resolutions VGA~WUXGA, 480i~1080p, 4K UHD@24/25/30Hz (RGB 4:4:4 & YUV 4:2:2), 4K UHD@ 60Hz (YUV 4:2:0), 4K/2K@24/25/30Hz (RGB 4:4:4 & YUV 4:2:2) and 4K/2K@ 60Hz (YUV 4:2:0) dependent upon the output display's EDID settings

/// Audio supported LPCM 2CH, 6CH, 8CH/AC3/DTS/Dolby Digital Plus/ Dolby TruHD & DTS-HD

/// HDMI, HDCP 1.4 and DVI compliant
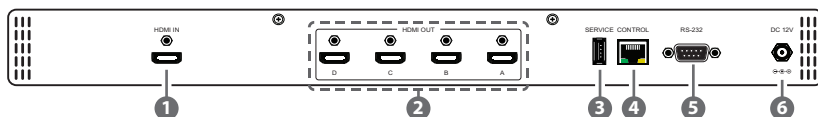
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel
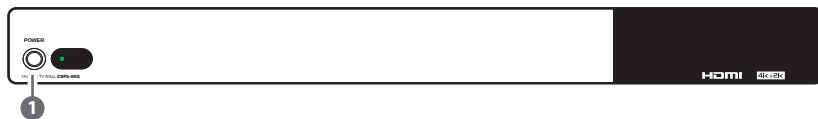
1 POWER: Press the POWER button to power ON the unit or to set it to standby mode.

When the power is disconnected, press and hold this button while connecting the power supply to reset the system back to default settings.

6.2 Rear Panel

1 HDMI IN: Connect to an HDMI source device such as a DVD/Blu-ray player and/or a PC/Laptop.

2 HDMI OUT A~D: Connect to HDMI TV/displays for display of the output image. It is recommended that the connection sequence for a TV wall set up should be as indicated in diagram opposite (Figure 1).

3 SERVICE: Reserved for manufacturer use only.

4 CONTROL: Connect the unit to an active network for telnet control from a PC/Laptop. Using the "DS-MSC14-4K APP"* allows control of multiple DS-MSC14-4K units (see Section 6.6 for details).

5 RS-232: Connect to a PC/Laptop or RS-232 control system with D-Sub 9pin cables for RS-232 control of the DS-MSC14-4K.

Note: RS-232 control system is limited to control of a single Video Wall unit only.

6 DC 12V: Plug the supplied 12V DC power supply into the unit then connect the adaptor to an AC outlet.

*Available from the downloads section of the product page on CYP website (http://www.cypeurope.com)
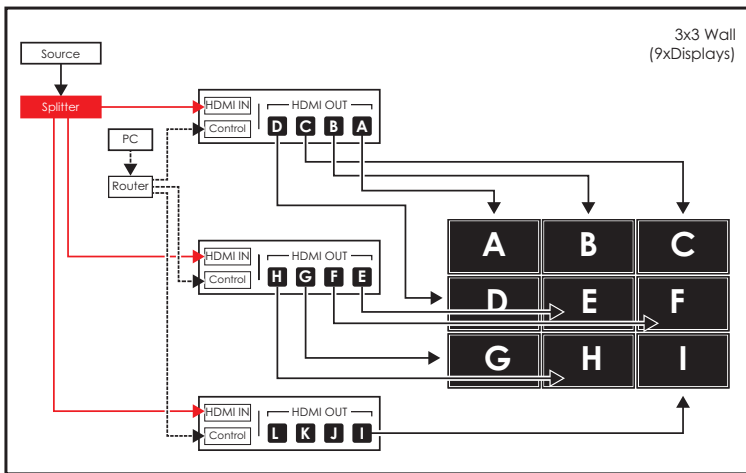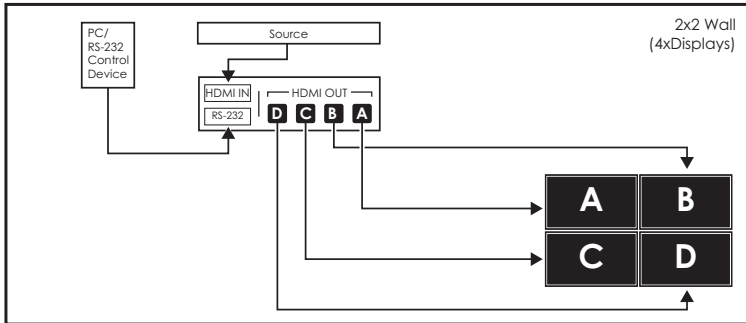
Figure 1: Video Wall Configurations

6.3 RS-232 Protocols

HDMI SPLITTER	
Pin	**Definition**
1	NC
2	TxD
3	RxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

REMOTE DEVICE (PC)	
Pin	**Definition**
1	NC
2	RxD
3	TxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

Baud Rate: 115200bps
Data Bit: 8 bits
Parity: None
Flow Control: None
Stop Bit: 1

6.4 RS-232 and Telnet Commands

COMMAND	DESCRIPTION	PARAMETER
HELP(?)	Show Command list	NONE
HELP(?) N	Show Command description	N=Command name
RRES	Request Current Output Resolution	NONE
SRES N1	Set Output Resolution to N1	N1=0(640x480@60), 1(480p60), 2(576p50), 3(800x600@60), 4(848x480@60), 5(1024x768@60), 6(720p50), 7(720p60), 8(1280x768@60), 9(1280x800@60), 10(1280x960@60), 11(1280x1024@60), 12(1360x768@60), 13(1366x768@60), 14(1400x1050@60), 15(1440x900@60), 16(1600x900RB@60), 17(1600x1200@60), 18(1680x1050@60), 19(1080p50), 20(1080p60), 21(1920x1200RB@60), 22(2048x1152RB@60), 23(1080I50), 24(1080I60), 25(1080p24), 26(1080p25), 27(1080p30), **28(Native)**

COMMAND	DESCRIPTION	PARAMETER
RINS	Get Input Resolution	0(VGA60), 1(VGA72), 2(VGA75), 3(VGA85), 4(WXGA60), 5(WXGA75), 6(XGA60), 7(XGA70), 8(XGA75), 9(XGA85), 10(SXGA60), 11(SXGA75), 12(SVGA56), 13(SVGA60), 14(SVGA72), 15(SVGA75), 16(SVGA85), 17(DTV_480P60), 18(DTV_576P50), 19(DTV_480I60), 20(DTV_576I50), 21(HDTV_720P50), 22(HDTV_720P60), 23(HDTV_1080I50), 24(HDTV_1080I60), 25(HDTV_1080P24), 26(HDTV_1080P50), 27(HDTV_1080P60), 28(V848_480_60), 29(V852_480_60), 30(V854_480_60), 31(V1024_852_60), 32(V1024_1024_60), 33(V1280_800_60), 34(V1280_960_60), 35(V1360_768_60), 36(V1366_768_60), 37(V1440_900_60), 38(V1400_1050_60), 39(V1360_1024_60), 40(V1600_900_60), 41(V1600_1200_60), 42(V1680_1050_60), 43(V1920_1200_60), 44(V2048_1080_24_1), 45(V2048_1080_24_2),

COMMAND	DESCRIPTION	PARAMETER
		46(V2048_1080_60), 47(V2048_1152_1), 48(V2048_1152_2), 49(V2048_1152_3), 50(V3840_2160_24), 51(V3840_2160_25), 52(V3840_2160_30), 53(V4096_2160_24), 54(K_NO_SIGNAL), 55(K_NO_SUPPORT)
ROSDD	Request Current OSD Display State	NONE
SOSDD N1	Set OSD Display Enable/Disable	N1=**0(OFF)**, 1(ON)
ROSDH	Request Current OSD Horizontal Position	NONE
SOSDH N1	Set OSD Horizontal Position to N1	N1=0~20 **(5)**
ROSDV	Request Current OSD Vertical Position	NONE
SOSDV N1	Set OSD Vertical Position to N1	N1=0~20 **(5)**
ROSDT	Request OSD Display Current Timeout Setting	NONE
SOSDT N1	Set OSD Display Timeout Setting	N1=0(Off), 5~50 (50)
ROSDG	Request OSD Gain Correction	NONE
SOSDG N1	Set OSD Gain Value	N1=0~10 **(2)**
SOSDI	Show OSD Information On/Off	NONE
SOSDR	Reset All OSD Settings	NONE
RBRI N1	Request Channel N1 Brightness Value	N1= 1~4
SBRI N1 N2	Set Channel N1 Brightness Value to N2	N1= 1~4, N2=0~100**(50)**

COMMAND	DESCRIPTION	PARAMETER
RCON N1	Request Chanel N1 Contrast Value	N1=1~4
SCON N1 N2	Set Channel N1 Contrast Value to N2	N1= 1~4, N2=0~100**(50)**
RSAT	Request Current Saturation Value	NONE
RSAT N1	Request Channel N1 Current Saturation Value	N1=1~4
SSAT N1 N2	Set Channel N1 Saturation Value to N2	N1= 1~4, N2=0~100**(50)**
RHUE N1	Request Channel N1 Current Hue Value	N1=1~4
SHUE N1 N2	Set Channel N1 Hue Value to N2	N1= 1~4, N2=0~100 **(50)**
SIMRE N1	Reset Brightness/Contrast/ Saturation/Hue Value to Default	N1=1(Brightness), 2(Contrast), 3(Saturation), 4(Hue)
SPIRE	Reset all Channels Brightness, Contrast, Saturation, Hue Value to Default	NONE
RIPM	Request Current IP Mode	NONE
SIPM N1	Set IP Mode to DHCP or Static	N1=**0(Static)**, 1(DHCP)
RIPA	Request Current Static IP Address to Screen	NONE
SIPA X.X.X.X	Set Static IP Address	X=0~255
RMAA	Request Current Static Subnet Address	NONE
SMAA X.X.X.X	Set Static Subnet Address	X=0~255
RGAA	Request Current Static Gateway Address	NONE
SGAA X.X.X.X	Set Static Gateway Address	X=0~255
RETIME	Request Current Ethernet Timeout	NONE

COMMAND	DESCRIPTION	PARAMETER
SETIME N1	Set Ethernet Timeout	N1=**0(OFF)**, 1(10 Minutes), 2(20 Minutes), 3(30 Minutes), 4(40 Minutes), 5(50 Minutes), 6(60 Minutes)
RLINK	Request Ethernet Address	NONE
RMUTE	Request Current Mute	NONE
SMUTE N1	Set Mute Audio	N1=0(Unmute), 1(Mute)
RPOW	Request Current Power State	NONE
SPOW N1	Set the Unit Power On/Off	N1=0(Off), 1(On)
RVER	Request Version	NONE
SREL	Relink the Unit in 2 Seconds	NONE
SDEF	Reset the Unit to Factory Defaults	NONE
RMN	Request Current TV Wall Format	NONE
SMN N1 N2	Set TV Wall N1 Row and N2 Column	N1=1~15(Row), N2=1~15(Column)
RBH	Request TV Wall Horizontal Bezel Correction	NONE
SBH N1	Set TV Wall Horizontal Bezel Correction	N1=0~255
RBV	Request TV Wall Vertical Bezel Correction	NONE
SBV N1	Set TV Wall Vertical Bezel Correction	N1=0~255
RBEZ	Request Current Bezel Correction State	NONE
SBEZ N1	Set Bezel Correction Enable/Disable	N1=0(Off), 1(On)
RMDN	Request Unit ID Number	NONE
SMDN N1	Set Unit ID Number to N1	N1=0~255
SWDE	Reset All TV Wall Settings	NONE

| COMMAND	DESCRIPTION	PARAMETER
SHOT N1	Fast Setting TV Wall Format from Hotkey N1	N1=**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 N1	Save Current TV Wall Settings to N1	N1=1~5
RFAVE N1	Recall TV Wall Settings from N1	N1=1~5

Note:

1. *RS-232 commands will be not executed unless followed by a carriage return. Commands are not case sensitive.*

2. *Multiple cascaded devices can not be controlled via RS-232 comands, for control of multiple commands please use the PC application (see Section 6.6 for details).*

3. *Values in* **Bold** *are the default settings.*

6.5 Telnet Control

Before attempting to use the Telnet control, please ensure that both the HDMI Video Wall unit (via the 'CONTROL' port) and the PC/Laptop are connected to the same 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" then press 'Enter'.

Under Mac OS X, go to Go→Applications→Utilities→Terminal. See below for reference.
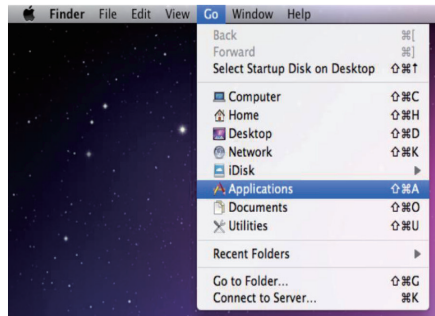
Once in the command line interface (CLI) type 'telnet', then the IP address of the unit and hit Enter. If the Telnet port (unit's port) is not set to the default of "23" then the correct port number will need to be entered after the IP address as shown below.

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

```
Command List
------------------
HELP
RRES
SRES
ROSDD
SOSDD
ROSDH
SOSDH
ROSDV
SOSDV
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
SREL
RMUTE
SMUTE
RPOW
SPOW
SDEF
RVER
RMN
SMN
RBH
SBH
RBV
SBV
RBEZ
SBEZ
RMDN
SMDN
SHOT
SFAVE
RFAVE
SWDE
```

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

6.6 PC Application Control

NOTE: The PC Application Control software can be downloaded from the 'Downloads' section on the product page on the CYP website (http://www.cypeurope.com).

Double click on the downloaded file to install the software. Once the application has installed successfully, click and open the application.

① Search MAC: Click on "Search MAC" to confirm how many TV Wall unit(s) are within the network then, select from here with the unit you wish to control.

Note: *This action should be executed each time the unit is powered ON or reset or the "DS-MSC14-4K " application is run.*

Select the unit that is to be adjusted then press "Connect" to connect to that unit.

When the unit is connected successfully, a dialog will appear showing "refresh completed" based on the selected MAC address. the application will display the current unit's status. However, image display will not be refreshed automatically and can only be refreshed manually.

When using more than 1 unit for a TV Wall setting, set up of the unit's ID number is required to ensure the correct display of each single TV wall image.

6.6.1 System Settings

① Power: Click on "Power" to power ON/OFF the currently selected unit. To control all connected units, click on "ALL IP" then click Power. From power ON to power OFF the application will disconnect the link, to power ON again please re-connect.

② Factory Reset: Click on "Factory Reset" to reset the device settings to default values, to switch all devices back to default setting click ALL IP and then "Factory Reset".

③ Refresh: Click on "Refresh" to read the current device settings, all of the TV Wall Settings will be based on the current selected device.

Note: Image Adjust settings will not be refreshed, users will have to click on "Image Adjust" to manually refresh to read Image Adjust current status.

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

6.6.2 Connect Interface
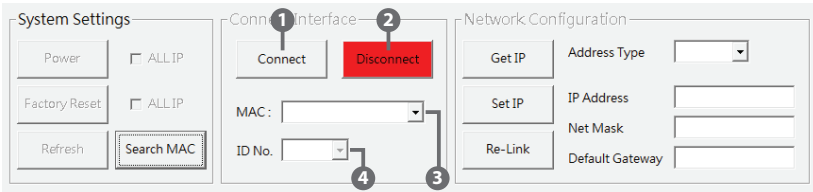
1 Connect: Click "Connect" to link the unit.

2 Disconnect: Click "Disconnect" to terminate the link.

3 MAC: Click on the "MAC" drop-down menu to display the available TV Wall units and select the required unit/MAC for connection.

4 ID No.: When more than one TV Wall unit is in use, it is important that ID No. is set correctly in order to split and arrange the image correctly.
Note: All on-line units within the same network will show after running "Search MAC".

6.6.3 Network Configuration
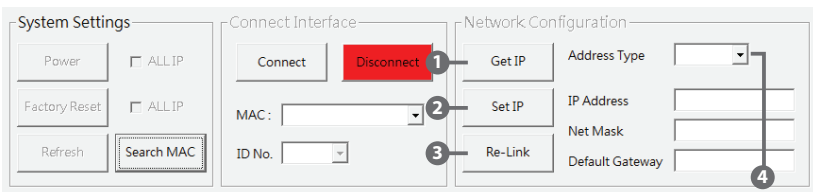
1 Get IP: Click "Get IP" to show current link status.

2 Set IP: Click "Set IP" to adjust IP settings such as IP Type, IP Address etc.

3 Re-Link: Click "Re-Link" to confirm the changes to the Network Configuration settings.

4 Address Type: Click on this drop-down menu to change the address type to DHCP/Static mode.

6.6.4 TV Wall Setup (1)

System Settings

Power	☐ ALL IP
Factory Reset	☐ ALL IP
Refresh	Search MAC

Connect Interface

| Connect | Disconnect |

MAC : [ ]

ID No. [ ]

Network Configuration

Get IP	Address Type [ ]
Set IP	IP Address [ ]
	Net Mask [ ]
Re-Link	Default Gateway [ ]

TV Wall Setup ①

TV Wall (1)	1x1	2x2	3x3	4x4	5x5	6x6
TV Wall (2)	2x3	3x2	3x4	4x2	4x3	4x5
TV Wall (3)	1x2	2x1	1x3	3x1	1x4	4x1
I/O Setup	2x4	3x5	5x4	5x3	6x2	6x3
Image Adjust						

① **Fast TV Wall Setting:** Click on hot key to pre-set the TV Wall setup.

6.6.5 TV Wall Setup (2)

1 **Manual Setup:** Manually setup the TV wall configuration in Rows and Columns (from 1~15) and click on Send to confirm the setting**.**

2 **Bezel Correction Horizon & Vertical:** Set up the Bezel Correction settings on the selected MAC/ID number. The correction will be made to all outputs of the selected unit at once.

3 **Bezel Correction (ON/OFF):** When the above action is taken Bezel Correction will switch to ON automatically, to switch it off click on OFF to terminate the function. To execute Bezel Correction on all units, click on ALL IP. It is recommended that when displaying moving content on the TV Wall the Bezel Correction should be set to ON and when displaying static contents, the Bezel correction can be set to OFF.

6.6.6 TV Wall Setup (3)

1 **Save TV Wall Settings:** Save current settings to a Favorite. Up to 5 preset Favourite settings can be stored.

2 **Recall TV Wall Settings:** Recall preset stored TV Wall settings.

6.6.7 I/O Setup

① Output Resolution and OSD Menu Adjustment: All settings under I/O Setup can be done with single TV Wall unit or by clicking on "ALL IP" units with a single click on. Parameters and default values are as stated in RS-232 description parameters.

② Mute: Sets Audio Mute to ON/OFF.

③ OSD Info: Shows/hides the OSD Information.

④ Refresh: Refreshes the current page.

⑤ Reset: Resets current page.

6.6.8 Image Adjust

① Brightness, Contrast, Saturation and Hue Adjustment: All settings under Image Adjust can be done with single TV Wall unit or by clicking on "ALL IP" units with a single click on. Parameters and default values are as stated in RS-232 description parameters.

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

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

Note:

1. When the resolution of the Input signal is above 4K2K, the unit will only support RGB colour space, YUV is not supported.

2. When in TV Wall split mode some resolutions will not be supported (please refer to Section 9.3 for details).

7. CONNECTION DIAGRAM

DVD/Blu-ray Player

HDMI Input

Router

Power Supply

D **C** **B** **A**

HDMI Outputs

RS-232 Equipped PC/Laptop

2×2 TVs/Displays (Total 4 Screens)

DVD/Blu-ray Player

HDMI Input

HDMI Splitter

PC/Laptop

Router

HDMI Input

LAN Connections

Power Supply

D C B A

HDMI Outputs

HDMI Input

Power Supply

H G F E

HDMI Outputs

HDMI Input

Power Supply

3×3 TVs/Displays (Total 9 Screens)

I **HDMI Output**
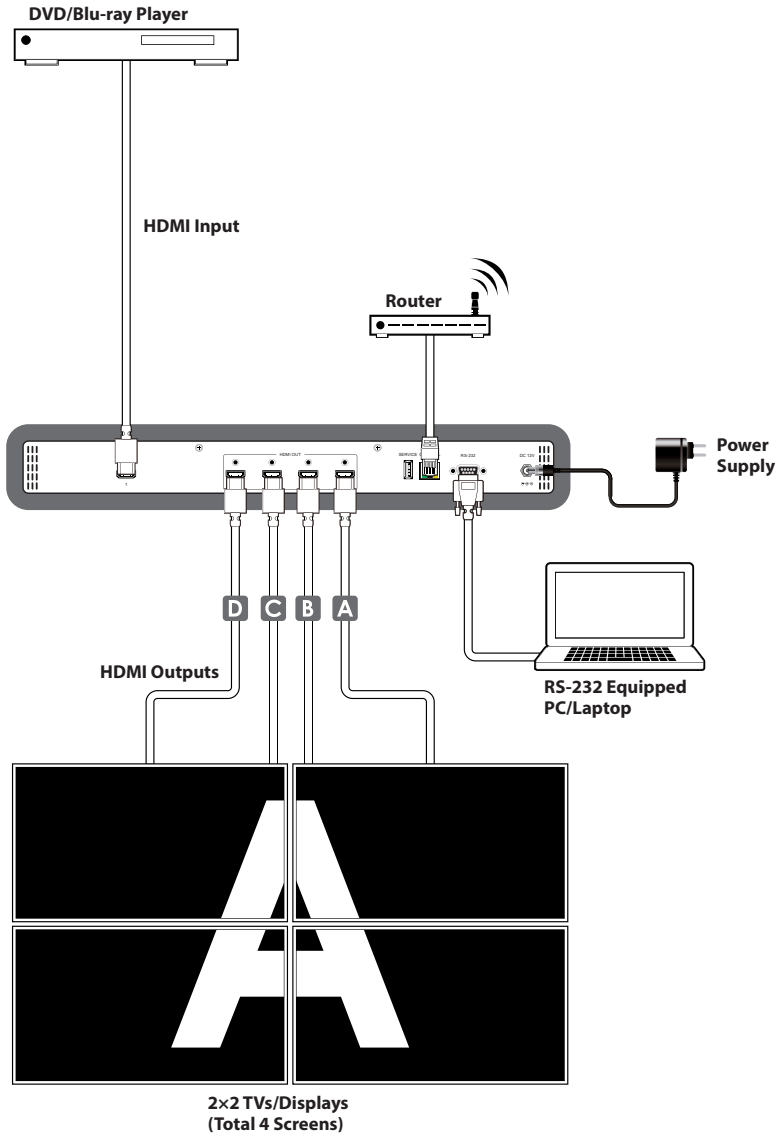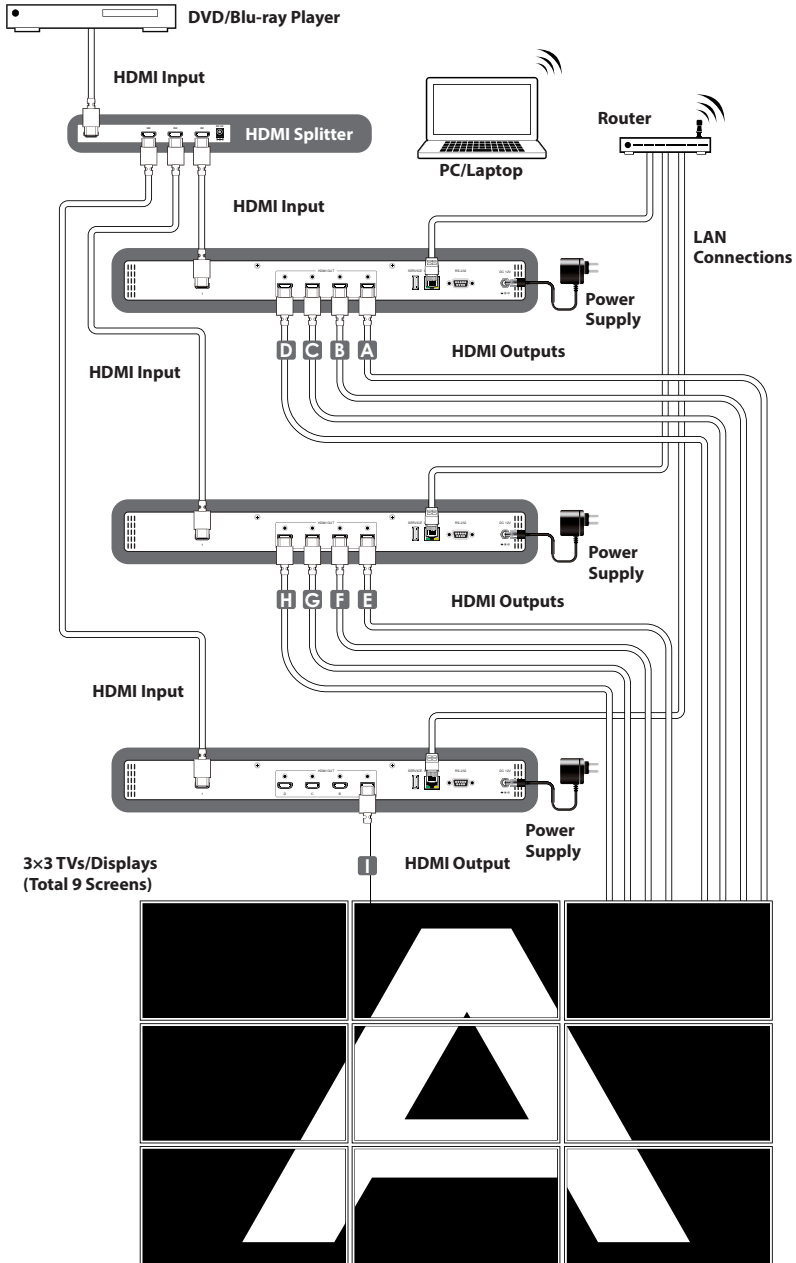
8. SPECIFICATIONS

8.1 Technical Specifications

Video Bandwidth	300 MHz/9 Gbps
Input Ports	1×HDMI (Female type), 1×Control (RJ45), 1×RS-232 (D-sub 9-pin), 1×USB (Service only)
Output Ports	4×HDMI (Female type)
IR Frequency	30~50kHz
Baud Rate	115200bps
ESD Protection	Human body model: ±8 kV (air-gap discharge) ±4 kV (contact discharge)
Power Supply	12 V/3 A DC (US/EU standards, CE/FCC/UL certified)
Dimensions	438 mm (W)×269 mm (D)44 mm (H)/Jacks Excluded 482 mm (W)×274 mm (D)×52 mm (H)/Jacks Included
Weight	2956 g
Chassis Material	Metal
Color	Black
Operating Temperature	0 ˚C~40 ˚C / 32 ˚F~ 04 ˚F
Storage Temperature	−20 ˚C~60 ˚C / −4 ˚F~140 ˚F
Relative Humidity	20~90 % RH (non-condensing)
Power Consumption	12.98 W

8.2 Supported Resolutions

INPUT RESOLUTION	OUTPUT RESOLUTION
640×480@60/72/75/85	640×480
1280×768@60/75	480p@60 (720×480)
1024×768@60/70/75/85	576p@50 (720×576)
1280×1024@60/75	800×600
800×600@56/60/72/75/85	848×480
480p@60	1024×768
576p@50	720p@50 (1280×720)
480i@60	720p@60 (1280×720)
576i@50	1280×768
720p@50/60	1280×800
1080i@50/60	1280×960
1080p@24/50/60	1280×1024
848×480@60	1360×768
852×480@60	1366×768
854×480@60	1400×1050
1024×852@60	1440×900
1024×1024@60	1600×900 (RB)
1280×800@60	1600×1200
1280×960@60	1680×1050
1360×768@60	1080p@50/60
1366×768@60	1920×1200 (RB)
1440×900@60	2048×1152 (RB)
1400×1050@60	1080i@50/60
1360×1024@60	1080p@24/25/30
1600×900@60	
1600×1200@60	
1680×1050@60	
1920×1200@60	
2048×1080@24	
2048×1152@60	
3840×2160@24/25/30	
4096×2160@24	

8.3 Output Resolution Limitations

8.3.1 Input Resolution is 3840×2160

VIDEO WALL	1X1	2X2	3X3	4X4	5X5	6X6	7X7	8X8	9X9	10X10	15X15
0. 640×480	✓	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓
1. 480p@60 (720×480)	✓	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓
2. 576p@50 (720×576)	✓	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓
3. 800×600	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
4. 848×480	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
5. 1024×768	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
6. 720p50 (1280×720)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7. 720p60 (1280×720)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8. 1280×768	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9. 1280×800	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10. 1280×960	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11. 1280×1024	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12. 1360×768	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13. 1366×768	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
14. 1400×1050	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15. 1440×900	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16. 1600×900 (RB)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17. 1600×1200	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18. 1680×1050	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19. 1080p@50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20. 1080p@60	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
21. 1920×1200 (RB)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
22. 2048×1152 (RB)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
23. 1080i@50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
24. 1080i@60	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25. 1080p@24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
26. 1080p@25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
27. 1080p@30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
28. Native	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

8.3.2 Input Resolution is 4096×2160

VIDEO WALL	1X1	2X2	3X3	4X4	5X5	6X6	7X7	8X8	9X9	10X10	15X15
0. 640×480	✓	✓	✗	✗	✗	✗	✓	✓	✓	✓	✓
1. 480p@60 (720×480)	✓	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓
2. 576p@50 (720×576)	✓	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓
3. 800×600	✓	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓
4. 848×480	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
5. 1024×768	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
6. 720p50 (1280×720)	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
7. 720p60 (1280×720)	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
8. 1280×768	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
9. 1280×800	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
10. 1280×960	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
11. 1280×1024	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
12. 1360×768	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13. 1366×768	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
14. 1400×1050	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15. 1440×900	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16. 1600×900 (RB)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17. 1600×1200	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18. 1680×1050	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19. 1080p@50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20. 1080p@60	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
21. 1920×1200 (RB)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
22. 2048×1152 (RB)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
23. 1080i@50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
24. 1080i@60	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25. 1080p@24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
26. 1080p@25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
27. 1080p@30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
28. Native	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

8.3.3 Input Resolution is 2048×1080/2048×1152

VIDEO WALL	1X1	2X2	3X3	4X4	5X5	6X6	7X7	8X8	9X9	10X10	15X15
0. 640×480	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
1. 480p@60 (720×480)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. 576p@50 (720×576)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3. 800×600	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4. 848×480	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5. 1024×768	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6. 720p50 (1280×720)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7. 720p60 (1280×720)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8. 1280×768	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9. 1280×800	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10. 1280×960	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11. 1280×1024	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12. 1360×768	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13. 1366×768	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
14. 1400×1050	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15. 1440×900	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16. 1600×900 (RB)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17. 1600×1200	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18. 1680×1050	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19. 1080p@50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20. 1080p@60	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
21. 1920×1200 (RB)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
22. 2048×1152 (RB)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
23. 1080i@50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
24. 1080i@60	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25. 1080p@24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
26. 1080p@25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
27. 1080p@30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
28. Native	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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
OSD	On-Screen Display
USB	Universal Serial Bus
VGA	Video Graphics Array
WUXGA	Widescreen Ultra Extended Graphics Array