

SPLITMUX-VWC-4HDLC

HDMI 1x4 TV WALL



User manual

VER:1.0

1. Introduction

The 1 by 4 HDMI TV Wall supports CVBS/VGA/HDMI/USB play input sources to be freely arranged on 4 displays. The embedded scaler converts signals from the input sources to match the native resolution of monitors, flat panel displays, projectors as well as user-selectable output settings up to 1920x1080. All the operation and control can be done through IR, Ethernet and RS-232. The HDMI TV Wall is widely used in KTV, hotels, bars, leisure centers, shopping malls, television stores, cinemas, products display, media advertising, building, education and training, Brand stores, airports, subway, etc.

2. Package Contents

- SPLITMUX-VWC-4HDLC-----1pcs
- 12V/2.0A DC power adaptor-----1pcs
- Operation Manual-----1pcs
- 38KHz IR Receiver cable-----1pcs
- TV Wall Remote-----1pcs
- RS232 cable-----1pcs

3. Feature

- Compliant with HDMI1.3a, DVI1.0;
- Output source signal to 4 displays (2 by 2 Video wall) as a full image with adjustable Bezel Correction;
- Supports IR, Ethernet and RS232 controls;
- Supports cascade to 9 display(3 by 3 video wall) mode;
- Supports CVBS/VGA/HDMI input and USB movie, picture and music playback;
- Advanced video De-interlacer for improving 480i and 576i SD video input;
- Supports input formats:
CVBS: PAL, NTSC, SECAM with stereo audio input;
VGA:640x480@60Hz, 800x600@60Hz, 1024x768@60Hz,

1280x1024@60Hz, 1280x720@60Hz, 1360x768@60Hz, 1440x900@60Hz, 1680x1050@60Hz, 1920x1080@60Hz with stereo audio input;

HDMI: 1080p@50/60Hz, 1080i@50/60Hz, 720p@50/60Hz, 576i/p,480i/p, 640x480@60Hz, 800x600@60Hz, 1024x768@60Hz, 1280x1024@60Hz, 1280x720@60Hz, 1360x768@60Hz, 1440x900@60Hz, 1680x1050@60Hz, 1920x1080@60Hz;

USB: MPEG, H.264, RM/RMVB movie decode, JPEG, BMP, PNG Picture decode and MPEG1/2, MP3 audio decode;

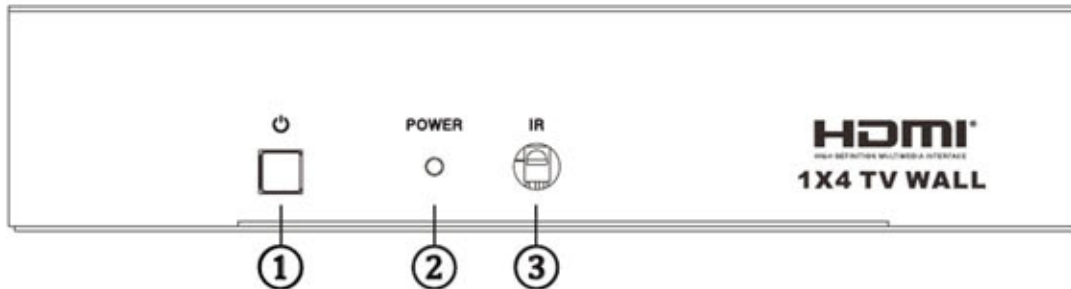
- Supports output resolution up to 1080p@60Hz;
- Perfect as a video screen splitter, a video converter and a video switcher;

4. Specification

Video Bandwidth:	225MHz/6.75Gbps
Input ports:	1x HDMI (Female type), 1xUSB,1xVGA, 1x3.5mmAudio,1xCVBS+L/R,1xRCA
Output ports:	5x HDMI (Female),1xCoax, 1x3.5mm,1xIR Ext
HDMI Cable Distance:	15M/8-bit 1080p
ESD Protection:	Human body model: ± 8kV (air-gap discharge) ± 4kV (contact discharge)
Power Supply:	12V/2.0A DC (US/EU standards, CE/FCC/UL certification)
Dimensions (mm):	250mm (W) X 118mm(D) X 32mm(H)
Weight (g):	1050 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:	7.5W

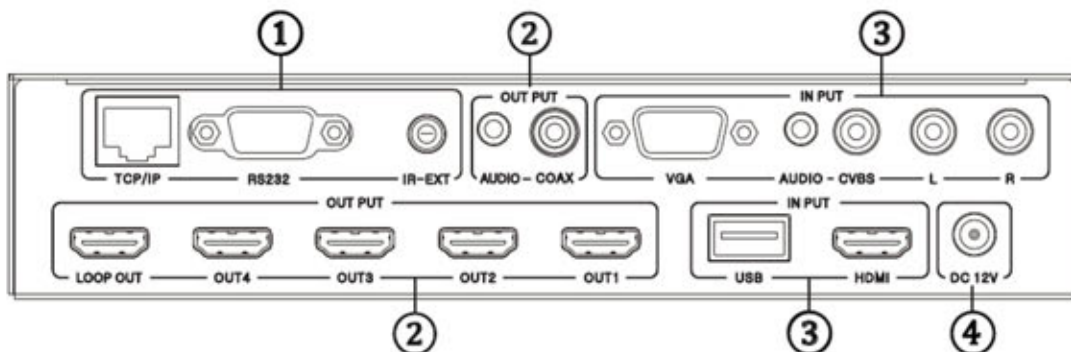
5. Panel Functions

5.1 Front panel



- ① **Power Button:** Press this button to power the device on/off.
- ② **Power LED:** The LED will illuminate green when the power is ON, red when it is in 'Standby' mode.
- ③ **IR:** IR Receiver window (accepts the remote control signal of this device only).

5.2 Rear panel



① Control part

- **TCP/IP:** This port is the link for TCP/IP controls, connect to an active Ethernet link with an RJ45 terminated cable.
- **RS232:** Connect to a PC or control system with D-Sub 9-pin cable for the transmission of RS-232 commands.
- **IR EXT:** if the panel sensor is obstructed or the unit is installed in a closed area out of infrared line-of-sight, the IR RX receiver included can be inserted into the IR EXT port at the rear to extend the IR sensor range and enable local control of the TV Wall.

② **Output Maximum cable length- 100 feet**

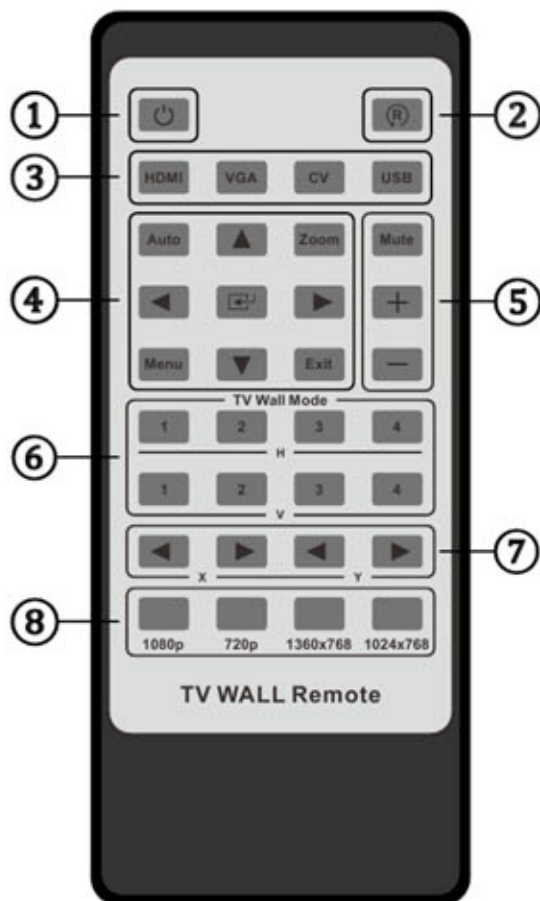
- **HDMI OUT:** Connect with HDMI TV/displays for output image display. It is suggested that the connection sequence should be placed as the diagrams show for TV wall set up. **LOOP OUT** is the designated port for cascading the input signal.
- **AUDIO OUT :** The coax and audio out are where you connect to the digital or analog audio amplifier .

③ **Input Maximum cable length- 25 feet**

Connect with source equipment such as DVD/Blue-ray players, PC, Game console or USB disc devices to CVBS,VGA,HDMI,USB input port.

- ④ **DC 12V :** Plug the 12V/2.0A DC power supply into the DC12V power in.

6. Remote Control

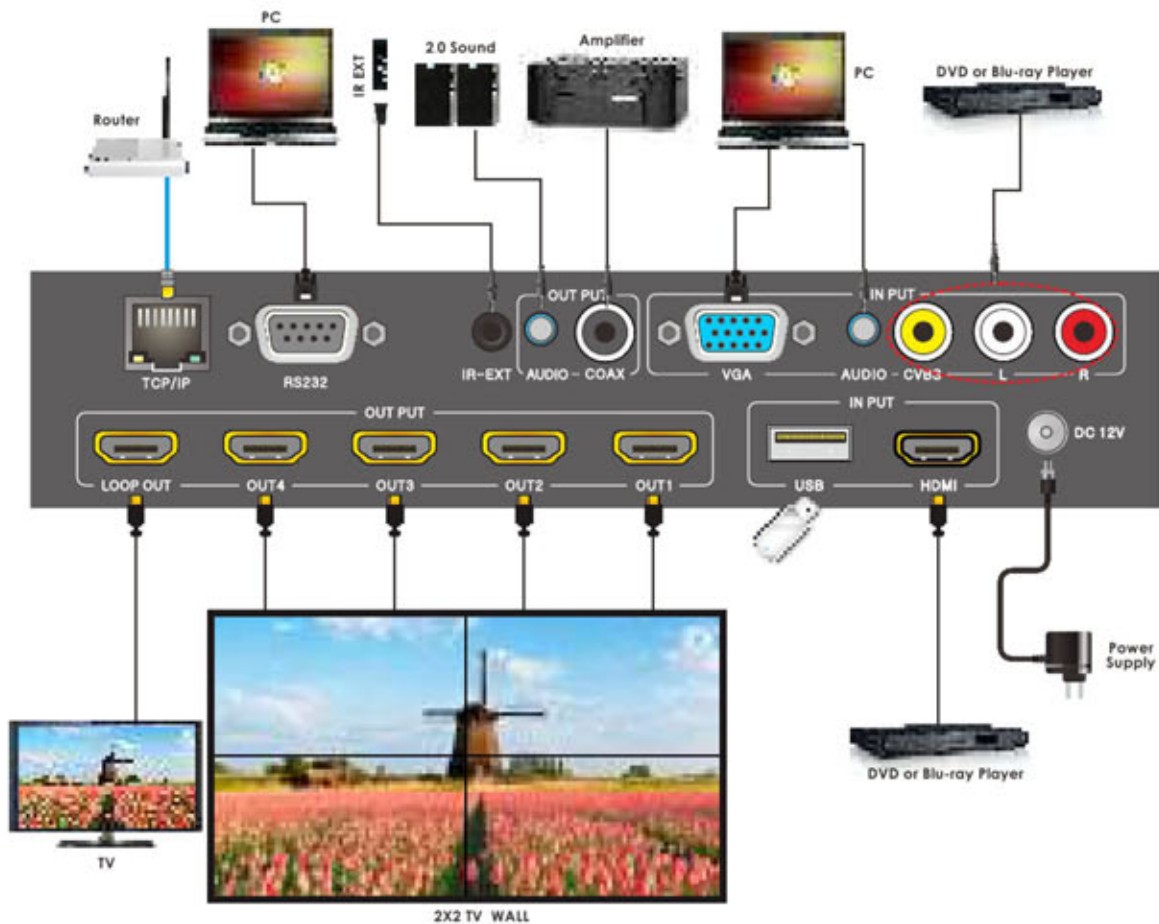


- ① Press this button to power on the TV Wall or set it to standby mode.
- ② Press this button for rotate 90° screen (only for 1x2, 1x3, 1x4 TV Wall mode).
- ③ Input Sources select button.
- ④ **AUTO** button for VGA input auto adjustment function;
ZOOM button for all input sources zoom in and zoom out function. The other buttons are for USB input source control functions.
- ⑤ These buttons are for Audio output volume adjustment function, (include HDMI, Coaxial and analog audio output).

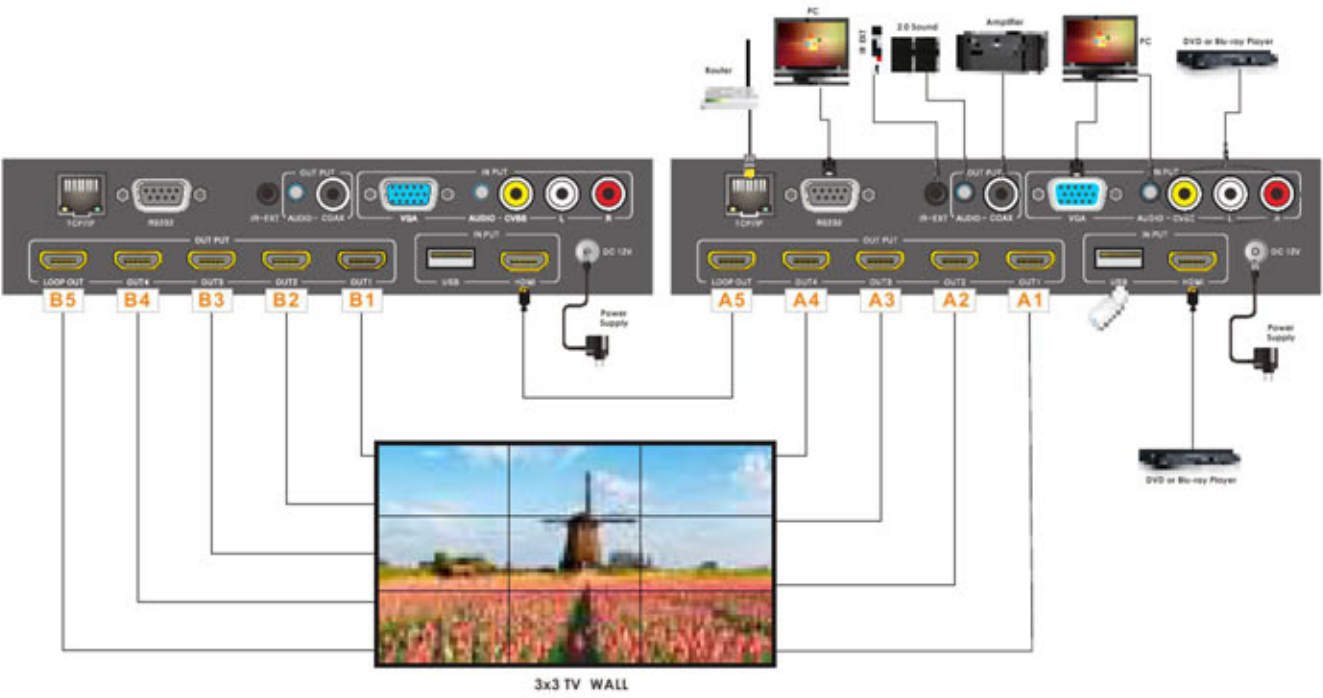
- ⑥ TV Wall mode selection: such as 2x2 TV Wall mode, press “H” towards “2”, then press “V” towards “2”.
- ⑦ TV Wall Picture Bezel correction adjust: the users can set the bezel size of the images in zoom-in model, to make the whole image look coherently.
- ⑧ TV Wall output resolution selection.

6. Connection and Installation

• 2x2 TV Wall



• 3x3 TV Wall



7. TV Wall connection sequence diagram

1x2(H)	A1 A2
1x3(H)	A1 A2 A3
1x4(H)	A1 A2 A3 A4
1x2(V)	A1 A2
1x3(V)	A1 A2 A3
1x4(V)	A1 A2 A3 A4

2x1	<table border="1"><tr><td>A1</td></tr><tr><td>A2</td></tr></table>	A1	A2		
A1					
A2					
3x1	<table border="1"><tr><td>A1</td></tr><tr><td>A2</td></tr><tr><td>A3</td></tr></table>	A1	A2	A3	
A1					
A2					
A3					
4x1	<table border="1"><tr><td>A1</td></tr><tr><td>A2</td></tr><tr><td>A3</td></tr><tr><td>A4</td></tr></table>	A1	A2	A3	A4
A1					
A2					
A3					
A4					
2x2	<table border="1"><tr><td>A1</td><td>A2</td></tr><tr><td>A3</td><td>A4</td></tr></table>	A1	A2	A3	A4
A1	A2				
A3	A4				

Cascade 2

2x3	<table border="1"><tr><td>A1</td><td>A2</td><td>A3</td></tr><tr><td>B1</td><td>B2</td><td>B3</td></tr></table>	A1	A2	A3	B1	B2	B3		
A1	A2	A3							
B1	B2	B3							
3x2	<table border="1"><tr><td>A1</td><td>B1</td></tr><tr><td>A2</td><td>B2</td></tr><tr><td>A3</td><td>B3</td></tr></table>	A1	B1	A2	B2	A3	B3		
A1	B1								
A2	B2								
A3	B3								
2x4	<table border="1"><tr><td>A1</td><td>A2</td><td>A3</td><td>A4</td></tr><tr><td>B1</td><td>B2</td><td>B3</td><td>B4</td></tr></table>	A1	A2	A3	A4	B1	B2	B3	B4
A1	A2	A3	A4						
B1	B2	B3	B4						

4x2	A1	B1	
	A2	B2	
	A3	B3	
	A4	B4	
3x3	A1	A2	A3
	A4	B1	B2
	B3	B4	B5

Note: Not fully compatible with View Sonic Monitors.

To make HDMI Output Mode of the SPLITMUX-VWC-4HDLC function correctly with View Sonic monitors:

1. Using the software provided to control the unit serially (and over IP), switch the Output Mode to DVI
2. Plug in the HDMI cables for View Sonic monitors.
3. Switch the Output Mode back to HDMI.

If HDMI cables for View Sonic monitors are plugged-in while Output Mode is HDMI (before following this procedure), there will be no signal.

8. RS232 Control

To control the SPLITMUX-VWC-4HDLC using RS232, first connect the supplied RS232 cable between the SPLITMUX and a PC.

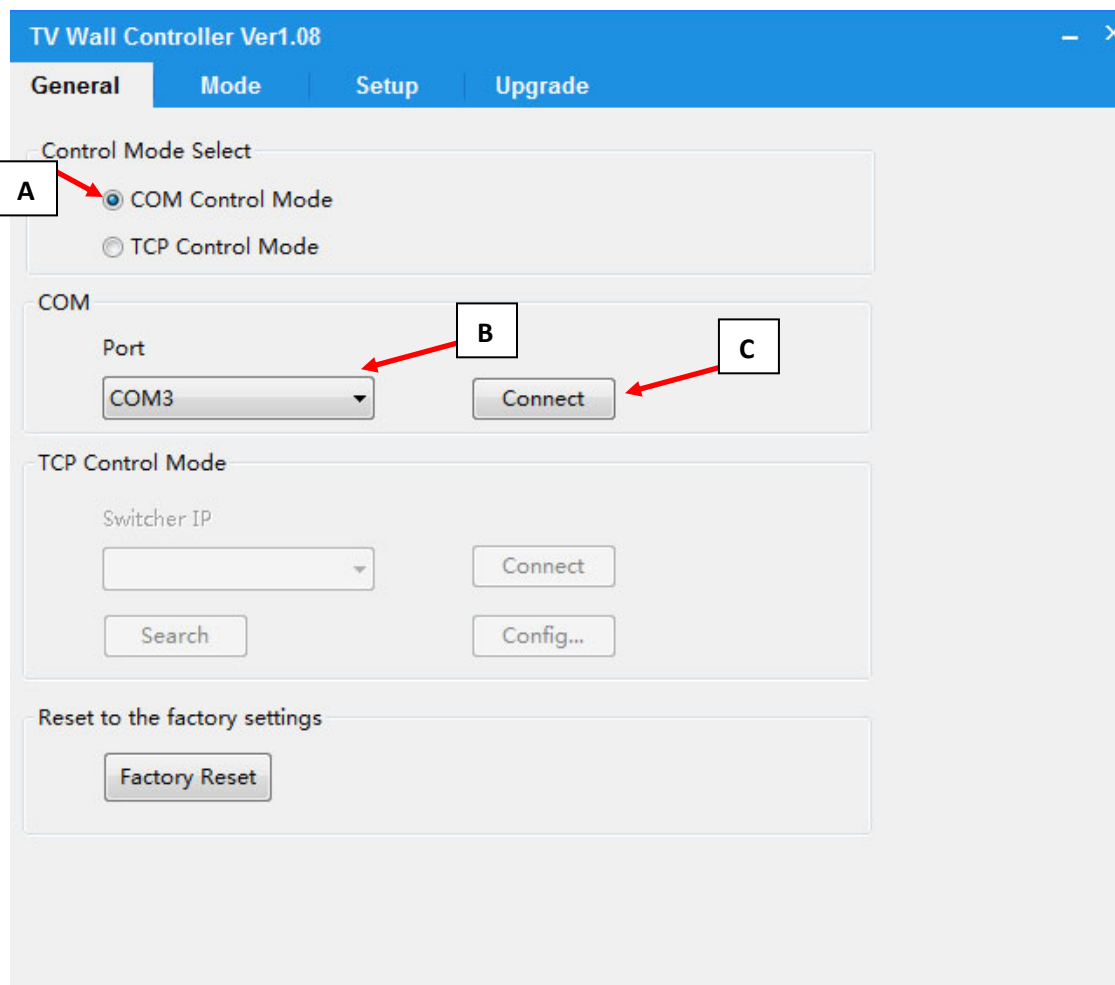
Note: To control the SPLITMUX-VWC-4HDLC using a terminal, see commands list on page 13.

Download the *splitmux-vwc-4hdlc_rs232.exe* file from the manual CD supplied. Save it to a known location on your PC.

Browse to the *splitmux-vwc-4hdlc_rs232.exe* and double-click on it to open the RS232 Controller menu.

1. Connecting to the Unit via COM Port

- A. Select “**COM control Mode**” option
- B. Select the port
- C. Click on “**Connect**”.

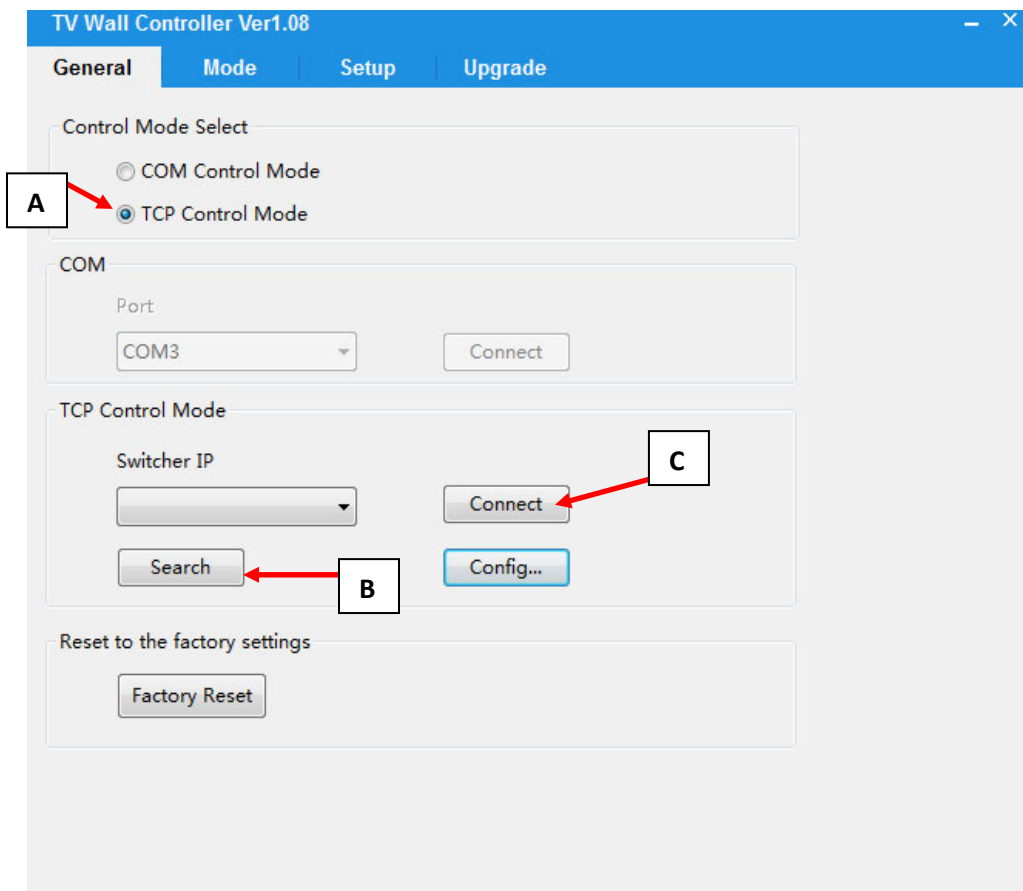


2. Connecting to the Unit Over IP:

A. To connect device over the network, connect the computer and the unit on the same network and select “**TCP control mode**” in the RS232 Controller application.

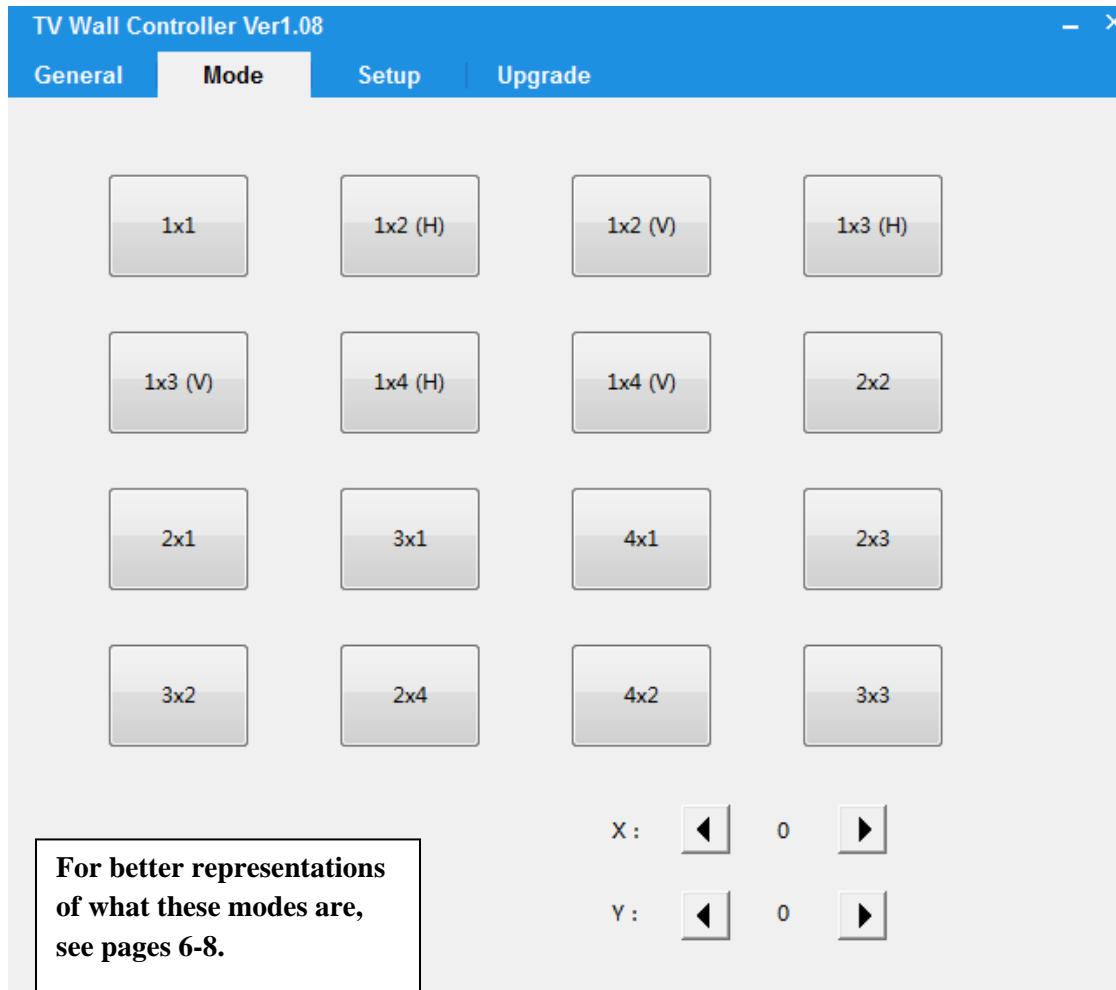
B. Click the “**Search**” button. The application will locate the SPLITMUX and show it under “**Switcher IP**”.

C. Click on the IP address to select it, then click on “**Connect**”.



3. Configuring Output

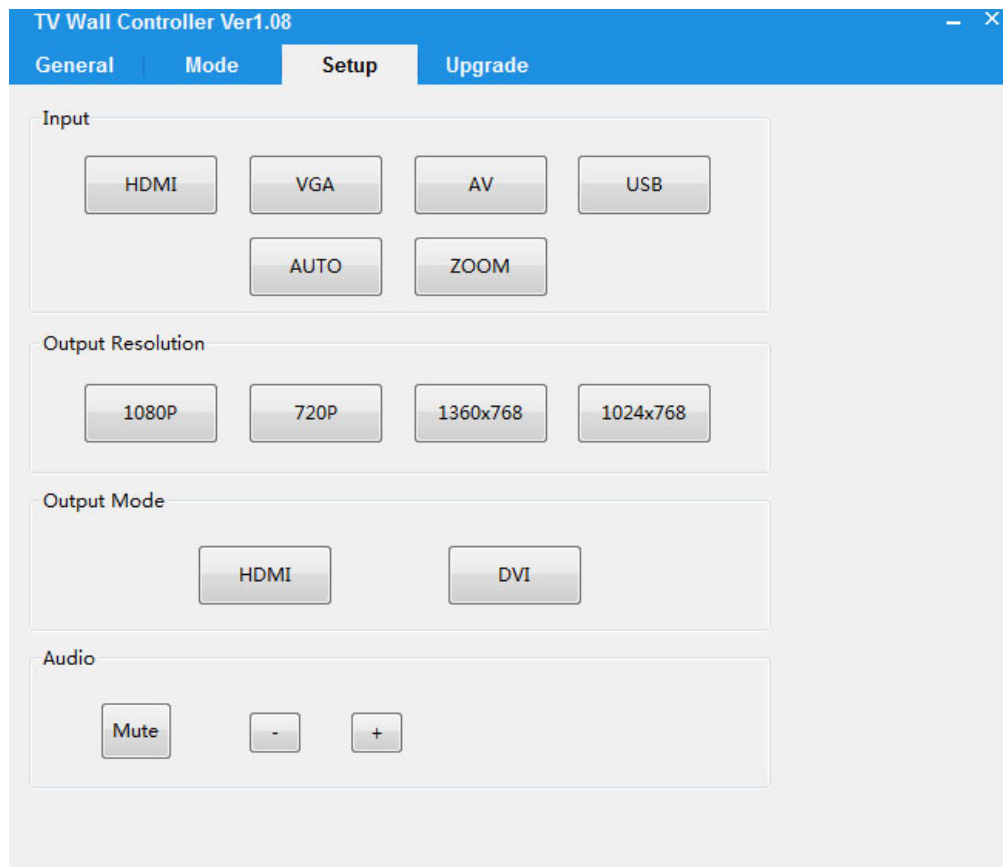
Click on the “**Mode**” tab in the RS232 Controller menu. Different modes of displaying the video sources on the screen can be selected from the modes page:



X and Y options can be used for position correction. Clicking the left or right arrow for “X” will shift the displayed images left or right on the display. Clicking the left or right arrow for “Y” will shift the displayed images up or down on the display.

4. Setup

Input/Output options and Audio options can be configured from the setup page:



RS-232 Commands using a Terminal or Remote Controller:

Configuration:

Baudrate : 115200

Data width : 8bit

Parity: none

Stop: 1bit

Mode configure command package length is 18byte:

[0x50+0x56+0x54+0x13+0x01+**Modeindex(1~16)**+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+**checksum**]

All you need to change is just "mode index", "checksum"

Checksum=0x50+0x56+0x54+0x13+0x01+**Modeindex(1~16)**+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00

For example: Set mode 1 command:

50 56 54 13 01 01 00 00 00 00 00 00 00 00 00 00 00 09

Mode query command package length is 18byte:

This is a query command which mean you must send query package and then receive an answer.

For example: Query mode

Send package: 50 56 54 13 02 00 00 00 00 00 00 00 00 00 00 00 00 0F

Receive package: 50 56 54 13 02 **02** 00 00 00 00 00 00 00 00 00 00 00 11

The red **02** mean the mode index, it should be 1~16.

Mode index list:

1x1	1;
1x2(H)	2;
1x2(V)	3;
1x3(H)	4;
1x3(V)	5;
1x4(H)	6;
1x4(V)	7;
2x2	8;
2x1	9;
3x1	10;
4x1	11;
2x3	12;
3x2	13;
2x4	14;
4x2	15;
3x3	16;

Video wall X configure command package length is 18byte:

0x50+0x56+0x54+0x15+0x04+0x01+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x14

The red 01 mean the X value increases, if 02 mean decrease.

Video wall Y configure command package length is 18byte:

0x50+0x56+0x54+0x15+0x05+**0x01**+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x15

The red **01** mean the Y value increases, if **02** mean decrease.

Video wall X and Y query command package length is 18byte:

This is a query command which mean you must send query package and then receive an answer.

For example: Query X and Y

Send package: 50 56 54 15 03 00 00 00 00 00 00 00 00 00 00 00 00 12

Receive package: 50 56 54 13 03 **14** 00 **16** 00 00 00 00 00 00 00 00 00 3C

The red **14** mean the X value, the blue **16** mean the Y value.

Resolution configure command package length is 18byte:

0x50+0x56+0x54+0x0A+0x06+
resolution(1~4)+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+ **checksum**

For example: Set resolution 720P command:

50 56 54 0A 06 02 00 00 00 00 00 00 00 00 00 00 00 0C

Resolution query command package length is 18byte:

This is a query command which mean you must send query package and then receive an answer.

For example: Query **Resolution**

Send package: 50 56 54 90 06 00 00 00 00 00 00 00 00 00 00 00 90

Receive package: 50 56 54 90 06 02 00 00 00 00 00 00 00 00 00 00 92

The blue 02 mean the resolution is 720P, it should be 1~4.

Resolution index list

1080P 1;

720P 2;

1360X768 3;

1024X768 4;

Output Mode configure command package length is 18byte:

0x50+0x56+0x54+0x02+0x05+DVI/HDMI+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+checksum

For example: Set output mode DVI command:

50 56 54 02 05 F0 00 00 00 00 00 00 00 00 00 00 00 F1

The red F0 mean DVI, if OF mean HDMI.

Output Mode query command package length is 18byte:

This is a query command which mean you must send query package and then receive an answer.

For example: Query **Output Mode**

Send package: 50 56 54 02 06 00 00 00 00 00 00 00 00 00 00 00 02

Receive package: 50 56 54 02 06 F0 00 00 00 00 00 00 00 00 00 00 F2

The blue F0 mean DVI, if 0F mean HDMI.

Input configure command package length is 18byte:

0x50+0x56+0x54+0x0A+0x01+input(1~4)+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+0x00+checksum

For example: Set input VGA command:

50 56 54 0A 01 02 00 01 00 00 00 00 00 00 00 00 00 00 08

Input query command package length is 18byte:

This is a query command which mean you must send query package and then receive an answer.

For example: Query Input

Send package: 50 56 54 90 01 00 00 01 00 00 00 00 00 00 00 00 00 00 8C

Receive package: 50 56 54 90 01 02 00 01 00 00 00 00 00 00 00 00 00 00 8E

The blue 02 mean VGA, it should be 1~4.

Input index list

- HDMI 1;
- VGA 2;
- AV 3;
- USB 4;

Input AUTO configure command package length is 18byte:

50 56 54 0A 0E 00 00 01 00 00 00 00 00 00 00 00 00 00 13

Input ZOOM configure command package length is 18byte:

50 56 54 0A 0F 00 00 01 00 00 00 00 00 00 00 00 14

Audio + configure command package length is 18byte:

50 56 54 17 07 01 00 00 00 00 00 00 00 00 00 00 19

Audio - configure command package length is 18byte:

50 56 54 17 07 02 00 00 00 00 00 00 00 00 00 00 1A

Audio Mute configure command package length is 18byte:

50 56 54 17 08 **0F** 00 00 00 00 00 00 00 00 00 00 28

The red **0F** mean Mute enable, if **F0** mean Mute Disable.

Mute query command package length is 18byte:

This is a query command which mean you must send query package and then receive an answer.

For example: Query **Mute**

Send package: 50 56 54 17 09 00 00 00 00 00 00 00 00 00 00 00 1A

Receive package: 50 56 54 17 09 **0F** 00 00 00 00 00 00 00 00 00 00 29

The red **0F** mean Mute enable, if **F0** mean Mute Disable.

Reset sys configure command package length is 18byte:

50 56 54 08 0A 00 00 00 00 00 00 00 00 00 00 00 0C

USB Upgrade command package length is 18byte:

50 56 54 07 07 00 00 00 00 00 00 00 00 00 00 00 08