4x4 Seamless Multiviewer/Matrix/Videowall

ITEM NO.: HM44

HM44 4x4 HDMI Seamless Matrix is the perfect solution for displaying content from up to four sources on four HDTV displays. Each of the sources can be individually scaled. Seamless switching ensures no frame loss during picture transitions. Eight preset buttons allow the user to store and recall custom-configured routing presets. Build in OSD menu simplifies system configuration. The HM44 HDMI Seamless Matrix is a great solution for small and large commercial venues that require content from four sources displayed on four displays instantly and without any loss of picture.

HM44 4x4 Seamless Multiviewer/Matrix/Videowall

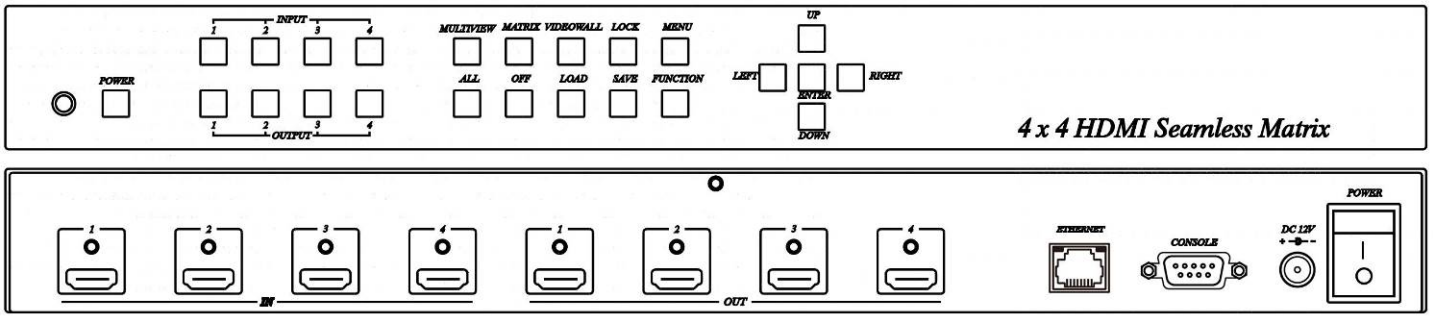
- Input and Output resolutions up to 1080p Full HD and 1920x1200 (WUXGA)
- Support LPCM7.1 @ 192KHz, Dolby True HD, DTS-HD MA
- HDMI1.3, DVI1.0, and HDCP 1.4 compliant
- Video-Wall mode supports 2 x 2 Video-Wall with 4 selectable input sources
- Support 4 input and 4 multiview windows seamless switching
- Multiview mode support scales and sizes each picture.
- Multiview mode support PIP, POP and set PIP priority
- Support panel button, IR remote, RS232, Web GUI and APP control
- Support OSD menu setting
- Field-upgradable firmware for both web server and RS232.

Application View:

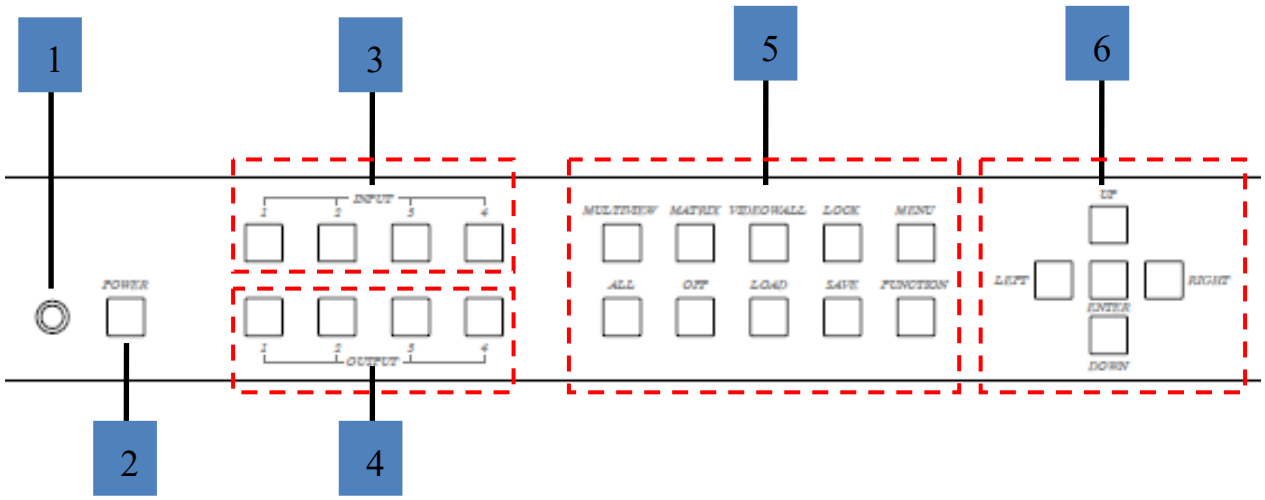
MATRIX MODE

VIDEO WALL MODE

Panel View ：



Front Panel Function:



Panel Button Function:

No.	Function Name	Description
1	IR	Receiving IR remote signal
2	POWER	Power on / standby
3	INPUT 1~4	Press these buttons to select the desired input
4	OUTPUT 1~4	Press these buttons to select the desired output (not available for videowall mode)
5	MULTIVIEW	Enter Multiview mode (All output display same screen)
	MATRIX	Enter Matrix mode
	VIDEOWALL	Enter videowall mode
	LOCK	Use this button to lock / unlock panel button and prevent accidental changes.
	MENU	● Enter OSD menu ● Back to upper level of menu
	ALL	Select all output (not available for videowall mode)
	OFF	Turn off the selected output (not available for videowall mode)
	LOAD	● Load layout/source in Multiview and Matrix mode from scene 1~8 ● Load screen position in VIDEOWALL mode from scene 1~4
	SAVE	● Save current layout/source in Multiview and Matrix mode to scene 1~8 ● Save screen position in VIDEOWALL mode to scene 2~4
	FUNCTION	● Switch different PIP/POP layout in Multiview Mode ● Bezel correction (adjust screen position) in VIDEOWALL MODE ● Not available in MATRIX MODE
6	UP	● Move menu function up in OSD ● Move screen position up in videowall mode.
	DOWN	● Move menu function down in OSD ● Move screen position down in videowall mode.
	LEFT	● Move menu function left in OSD ● Move screen position left in videowall mode.
	RIGHT	● Move menu function right in OSD ● Move screen position right in videowall mode.
	ENTER	Execution selected function

Operating:

Multiview mode:

Output/input selection:

1. Press OUTPUT 1~4 buttons to select the desired output windows (A~D), button LED will light on. You could select multiple outputs at the same time.
2. Press INPUT 1~4 buttons to switch to desired input
3. Press ENTER to quit the input selection.

Window layout selection:

1. Press FUNCTION button to enter layout selection.
2. Press INPUT /OUTPUT 1~4 to select desired layout, total 8 sets.
3. Press ENTER to quit the layout selection.

Save scene:

1. Press SAVE button.
2. Press INPUT /OUTPUT 1~4 to save current windows layout and source of windows.
3. Press ENTER to confirm.

Load scene:

1. Press LOAD button.
2. Press INPUT /OUTPUT 1~4 to load saved layout/source.
3. Press ENTER to confirm.

Matrix mode:

Output/input selection:

1. Press OUTPUT 1~4 buttons to select the desired output monitor, button LED will light on. You could select multiple OUTPUT at the same time.
2. Press INPUT 1~4 buttons to switch to desired input
3. Press ENTER to quit the input selection.

Save scene:

1. Press SAVE button.
2. Press INPUT /OUTPUT 1~4 to save current source of output.
3. Press ENTER to confirm.

Load scene:

1. Press LOAD button.
2. Press INPUT /OUTPUT 1~4 to load saved output/source, total 8 sets.
3. Press ENTER to confirm.

Videowall mode:

Input selection:

1. Press INPUT 1~4 buttons to switch to desired input

Bezel correction:

1. Press FUNCTION button.
2. Press OUTPUT 1~4 to select the monitor to adjust screen position, shift depends on output resolution.
3. Press INPUT 1~4 to select the monitor to adjust screen position, shift depends on input resolution.
4. Press UP, DOWN, LEFT or RIGHT button to shift the screen.
5. Press ENTER to quit the position adjustment.

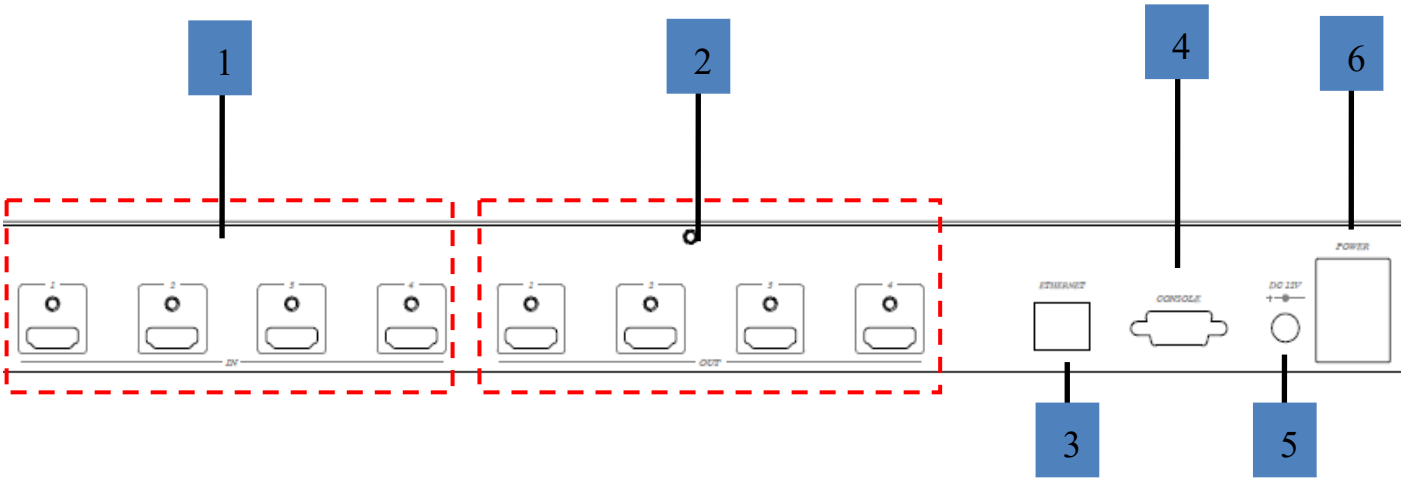
Save scene:

1. Press SAVE button.
2. Press INPUT 2~4 to save current position of each screen.
3. Press ENTER to confirm.

Load scene:

1. Press LOAD button.
2. Press INPUT 1~4 to load saved position of each screen(1 is factory default), total 4 sets.
3. Press ENTER to confirm.

Rear Panel Function:



Panel Connector Function:

No.	Name	Description
1	INPUT 1~4	HDMI Input 1~4
2	OUTPUT 1~4	HDMI Output 1~4
3	ETHERNET	Yellow LED: Link Green LED: Data transmit/receive
		WebGUI control / Web firmware update
4	RS232	RS232 control / firmware update
5	DC12V	External power supply
6	I/O	I: Power on O: Power off

IR Remote Control (IR01) :

Initial at first time use the remote control or after change battery of remote control, the IR remote control and the equipment IR Remote ID must be using same. The default IR Remote ID is 0.

To setting the Remote ID, Press and hold power button, then press button 0 to complete the setting. + (for example)

Remote Control Button Function:

Symbol	Function Name	Description
	POWER	Power on / standby
	UP	Move menu function up in OSD
	DOWN	Move menu function down in OSD
	LEFT	Move menu function left in OSD
	RIGHT	Move menu function right in OSD
ENTER	ENTER	Execution selected function
MENU	MENU	● Enter OSD menu ● Back to upper level of menu
1	Quick output/input selection	● Press to select output 1 ● Switch to input 1 if output have been selected
2	Quick output/input selection	● Press to select output 2 ● Switch to input 2 if output have been selected
3	Quick output/input selection	● Press to select output 3 ● Switch to input 3 if output have been selected
4	Quick output/input selection	● Press to select output 4 ● Switch to input 4 if output have been selected
5	Reserved	
6	Reserved	
7	Multiview	Switch to Multiview Mode
8	Matrix	Switch to Matrix mode
9	Videowall	Switch to Videowall mode
0	Turn off video	Turn off video if output have been selected
A	Reserved	
B	Reserved	
*	Reserved	
#	Reserved	

OSD MENU :

MAIN	SUB MENU	DESCRIPTION	
SETUP	OUTPUT RESULTION	480P	1366x768
		576P	1440x900
		720P50	1600x1200
		720P60	1680x1050
		1080P24	1920x1200
		1080P50	BACK
		1080P60, Default	EXIT
		1024x768	
		1280x800	
		1280x1024	
	PICTURE SETTING	OUT SELECT	OUT1~OUT4, **Default OUT1**
		CONTRAST	0~100, Default 50
		BRIGHTNESS	0~100, Default 50
		SATURATION	0~100, Default 50
		HUE	0~100, Default 50
		RESET	
		BACK	
		EXIT	
	OSD SETTING	MENU TIMEOUT	0~100, **Default 20**
		INFO TIMEOUT	0~100, **Default 5**
		INFO POSITION	RIGHT TOP
			LEFT TOP , Default
			RIGHT BUTTON
			LEFT BUTTON
		INFO DISPLAY	ON, OFF, **Default ON**
		BACK	
		EXIT	
	EDID	INPUT1 EDID	**1080P 2CH, Default**
			1080P MLT
			OUTPUT 1
			OUTPUT 2
			OUTPUT 3
			OUTPUT 4
		INPUT2 EDID	**1080P 2CH, Default**
			1080P MLT
			OUTPUT 1
			OUTPUT 2
			OUTPUT 3
			OUTPUT 4

		INPUT3 EDID	**1080P 2CH, Default**	
			1080P MLT	
			OUTPUT 1	
			OUTPUT 2	
			OUTPUT 3	
			OUTPUT 4	
		INPUT4 EDID	**1080P 2CH, Default**	
			1080P MLT	
			OUTPUT 1	
			OUTPUT 2	
			OUTPUT 3	
			OUTPUT 4	
		INPUT ALL	**1080P 2CH, Default**	
			1080P MLT	
			OUTPUT 1	
			OUTPUT 2	
			OUTPUT 3	
			OUTPUT 4	
		BACK		
		EXIT		
	HDCP	HDCP	**FOLLOW INPUT, Default**	
			ALWAYS ON	
		BACK		
		EXIT		
	AUDIO	MULTIVIEW MODE	OUTPUT1 AUDIO	**IN 1, Default**
				IN 2
				IN 3
				IN 4
				OFF
			OUTPUT 2 AUDIO	IN 1
				IN 2, Default
				IN 3
				IN 4
				OFF
			OUTPUT 3 AUDIO	IN 1
				IN 2
				IN 3, Default
				IN 4
				OFF
			OUTPUT 4 AUDIO	IN 1
				IN 2

				IN 3
				IN 4, Default
				OFF
			BACK	
			EXIT	
		MATRIX MODE	OUTPUT1 AUDIO	IN 1
				IN 2
				IN 3
				IN 4
				FOLLOW, Default
				OFF
			OUTPUT 2 AUDIO	IN 1
				IN 2
				IN 3
				IN 4
				FOLLOW, Default
				OFF
			OUTPUT 3 AUDIO	IN 1
				IN 2
				IN 3
				IN 4
				FOLLOW, Default
				OFF
			OUTPUT 4 AUDIO	IN 1
				IN 2
				IN 3
				IN 4
				FOLLOW, Default
				OFF
			BACK	
			EXIT	
		VIDEO WALL	OUTPUT 1 AUDIO	IN 1
				IN 2
				IN 3
				IN 4
				FOLLOW, Default
				OFF
			OUTPUT 2 AUDIO	IN 1
				IN 2
				IN 3
				IN 4

				FOLLOW, Default
				OFF
			OUTPUT 3 AUDIO	IN 1
				IN 2
				IN 3
				IN 4
				FOLLOW, Default
				OFF
			OUTPUT 4 AUDIO	IN 1
				IN 2
				IN 3
				IN 4
				FOLLOW, Default
				OFF
			BACK	
			EXIT	
		BACK		
		EXIT		
	BACK			
	EXIT			
NETWORK	IP ADDRESS	BYTE 1	192	
		BYTE 2	168	
		BYTE 3	0	
		BYTE 4	200	
		BACK		
		EXIT		
	SUBNET MASK	BYTE 1	255	
		BYTE 2	255	
		BYTE 3	255	
		BYTE 4	0	
		BACK		
		EXIT		
	GATEWAY IP	BYTE 1	192	
		BYTE 2	168	
		BYTE 3	0	
		BYTE 4	1	
		BACK		
		EXIT		
	DHCP CLIENT	DHCP CLIENT	ON	
			OFF, Default	
		BACK		

		EXIT	
	MEDIA TYPE	MEDIA TYPE	10M
			100M
			AUTO, Default
		BACK	
		EXIT	
	MAC FILTER	MAC FILTER	ON
			OFF, Default
		BACK	
		EXIT	
	BACK		
	EXIT		
SYSTEM	DEVICE ID	DEVICE ID	0~99, **Default 0**
		BACK	
		EXIT	
	REMOTE ID	REMOTE ID	0~9, **Default 0**
		BACK	
		EXIT	
	FACTORY DEFAULT	FACTORY DEFAULT	
	REBOOT	REBOOT	
	INFORMATION	FIRMARE V1.00	
		WEB V1.0	
	BACK		
	EXIT		
EXIT			

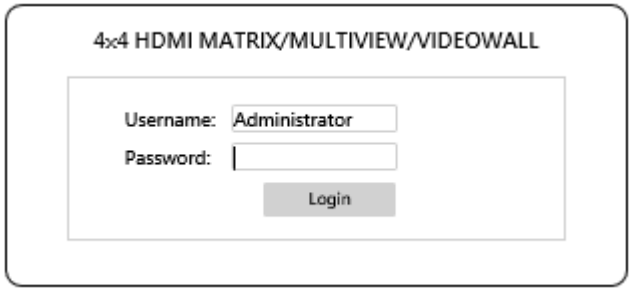
WebGUI Control:

Initial IP Configuration

1. Setup host IP Address same as your PC with same subnet.**(Default 192.168.0.200)**
   To change IP Address please enter OSD menu by panel button or IR remote control.
2. Enter IP Address in your web browser and you could link to the web page of host.
3. Browser support: Internet Explorer 9, Chrome 42.0.2311.135 m, Firefox 31.0 and higher

WebGUI Operating:

LOGIN:

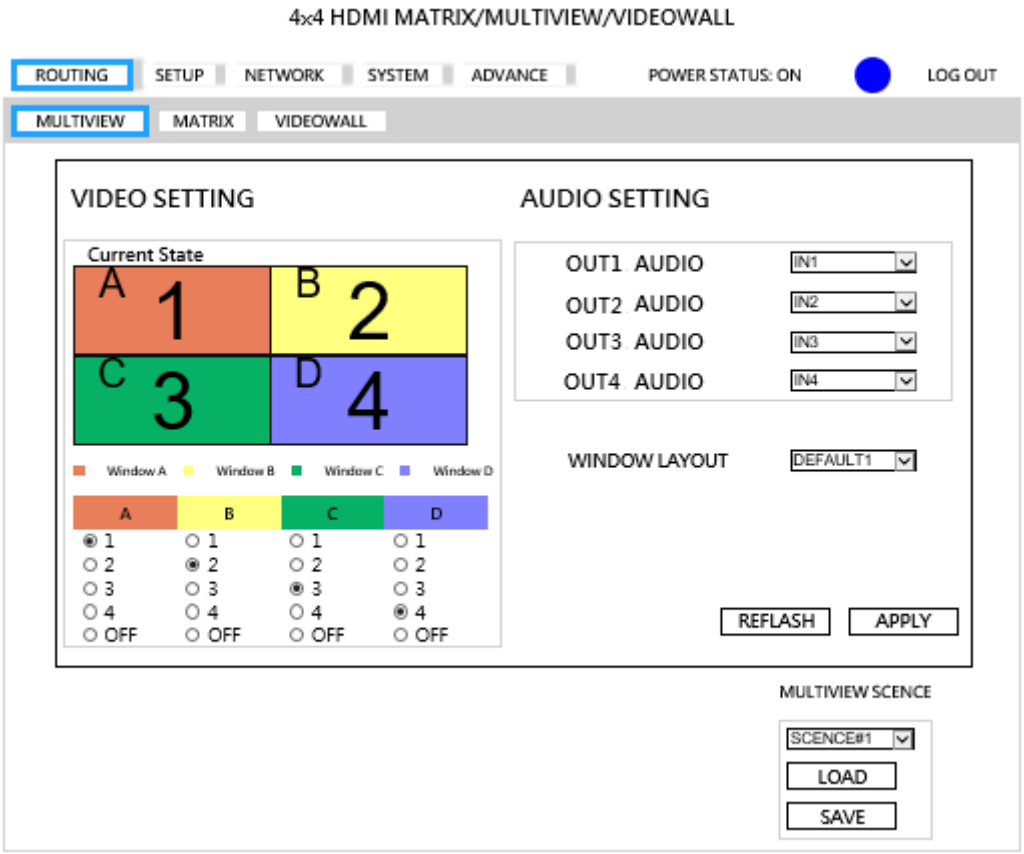


- USERNAME : admin
- PASSWORD : 123

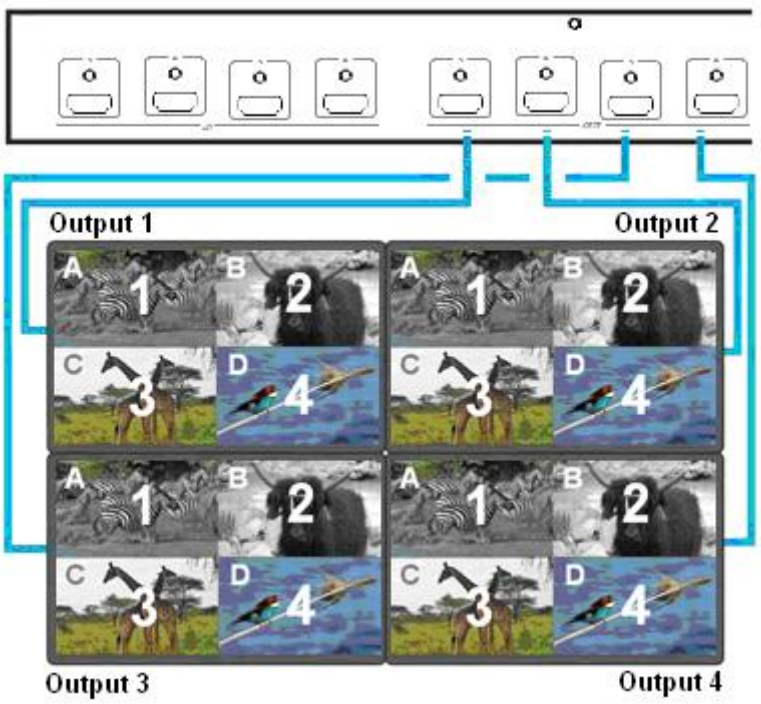
MAIN PAGE:

- ROUTING：Include MULTIVIEW, MATRIX, VIDEOWALL three mode
- SETUP：OUTPUT RESOLUTION, HDCP SETTING, ID SETTING, PICTURE SETTING, OSD SETTING
- NETWORK：IP ADDRESS, SUBNET MASK GATEWAY, DHCP CLIENT, MEDIA TYPE, MAC FILTER
- SYSTEM：change password
- ADVANCE：Adjust user define layout of MULTIVIEW mode

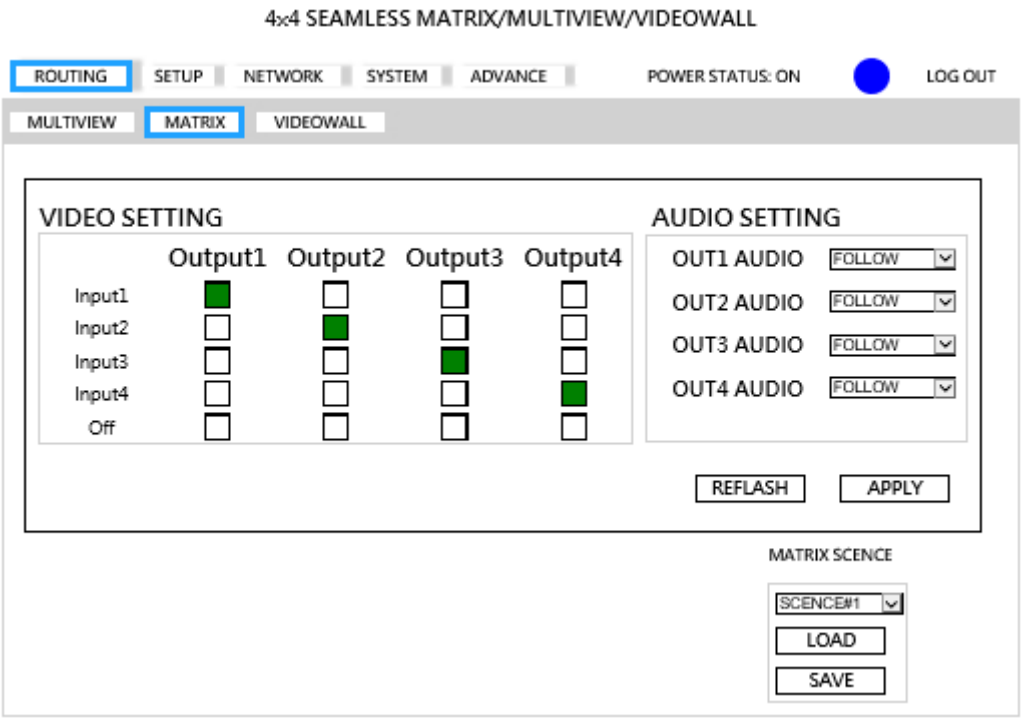
Multiview



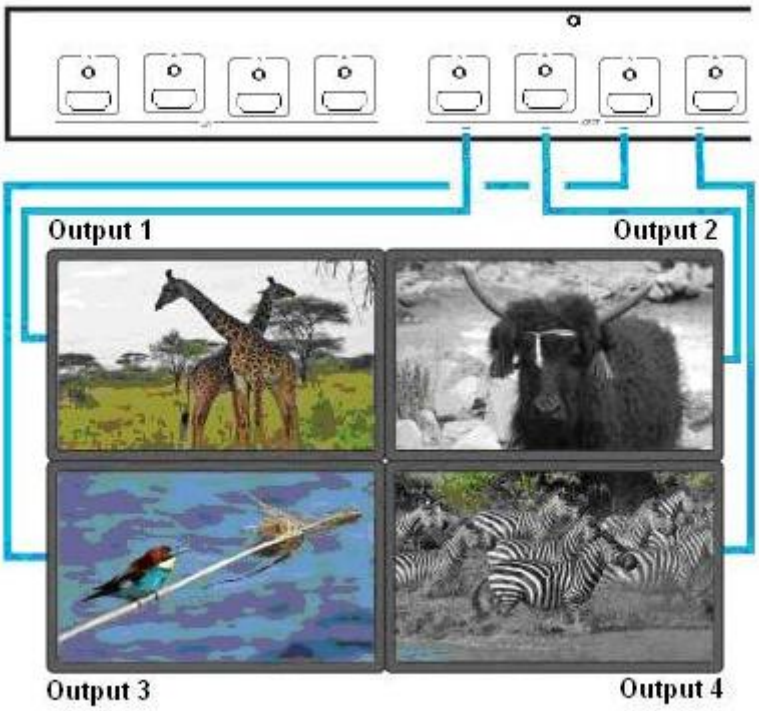
- VIDEO SETTING：Select video source of window A~D to input 1~4 or off
- AUDIO SETTING：Select audio source of output 1~4 from input 1~4 or off
- WINDOW LAYOUT：Select windows layout from default 1~4 or user define 1~4
- MULTIVIEW SCENCE：Select SCENCE 1~8 to load or save
- REFRESH：Refresh the information of host
- APPLY：Apply changes



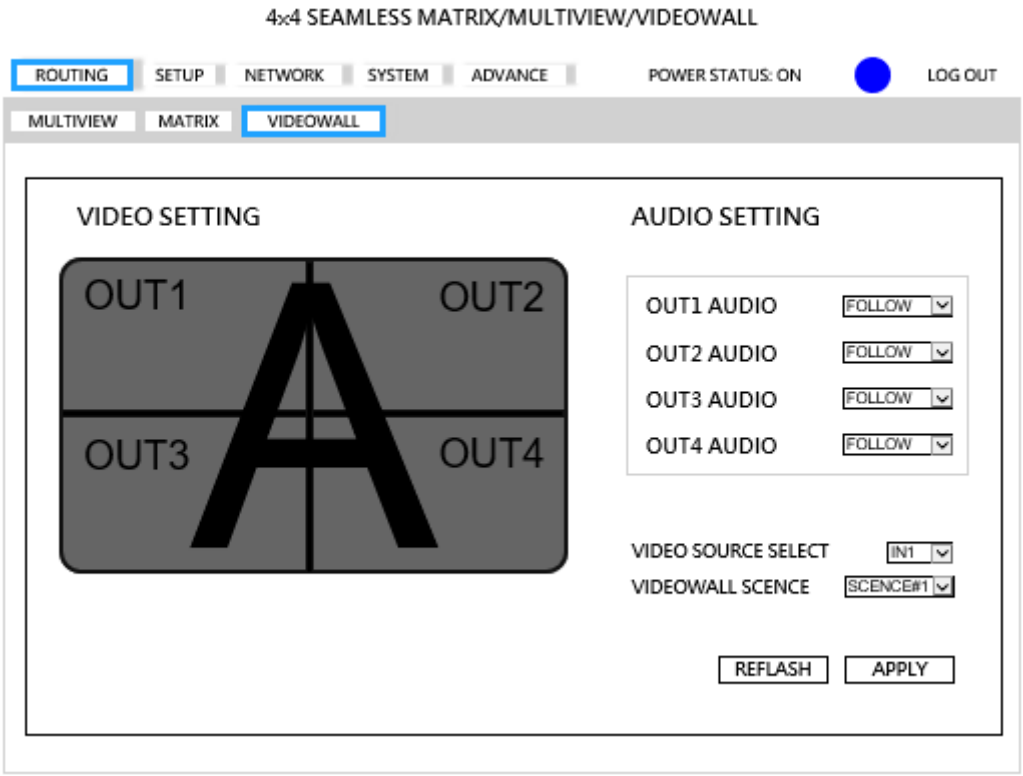
Matrix



- VIDEO SETTING：Select video source of output 1~4 to input 1~4, off or follow.
- AUDIO SETTING：Select audio source of output 1~4 from input 1~4,off or follow
- MATRIX SCENCE：Select SCENCE 1~8 to load or save
- REFRESH：Refresh the information of host
- APPLY：Apply changes

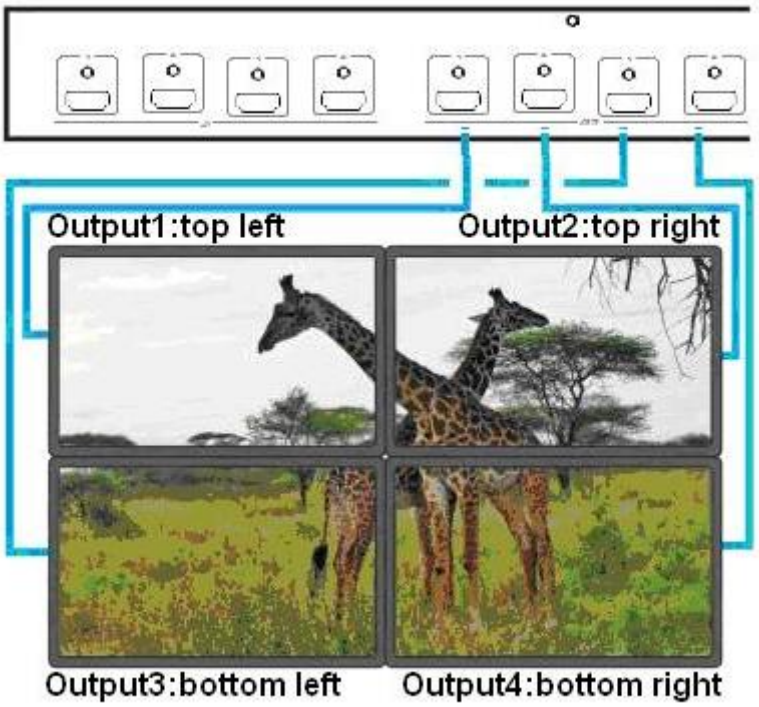


VIDEOWALL

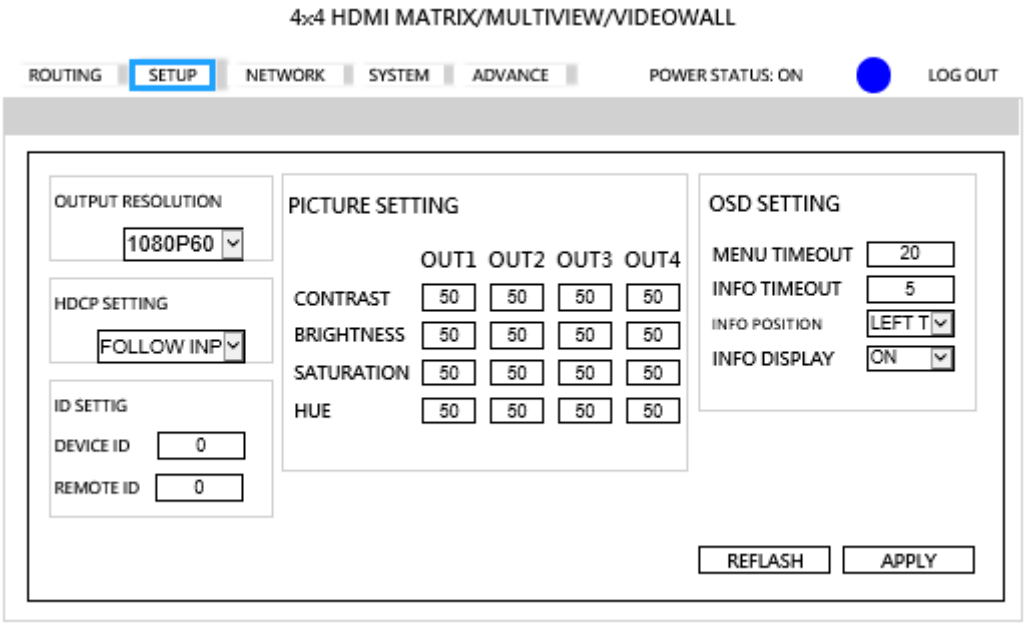


- VIDEO SETTING：Display videowall block of output 1~4
- AUDIO SETTING：Select audio source of output 1~4 from input 1~4,off or follow
- Video SCENCE：Select SCENCE 1~4 to load
- REFRESH：Refresh the information of host
- APPLY：Apply changes

*SCENCE 1 is factory default

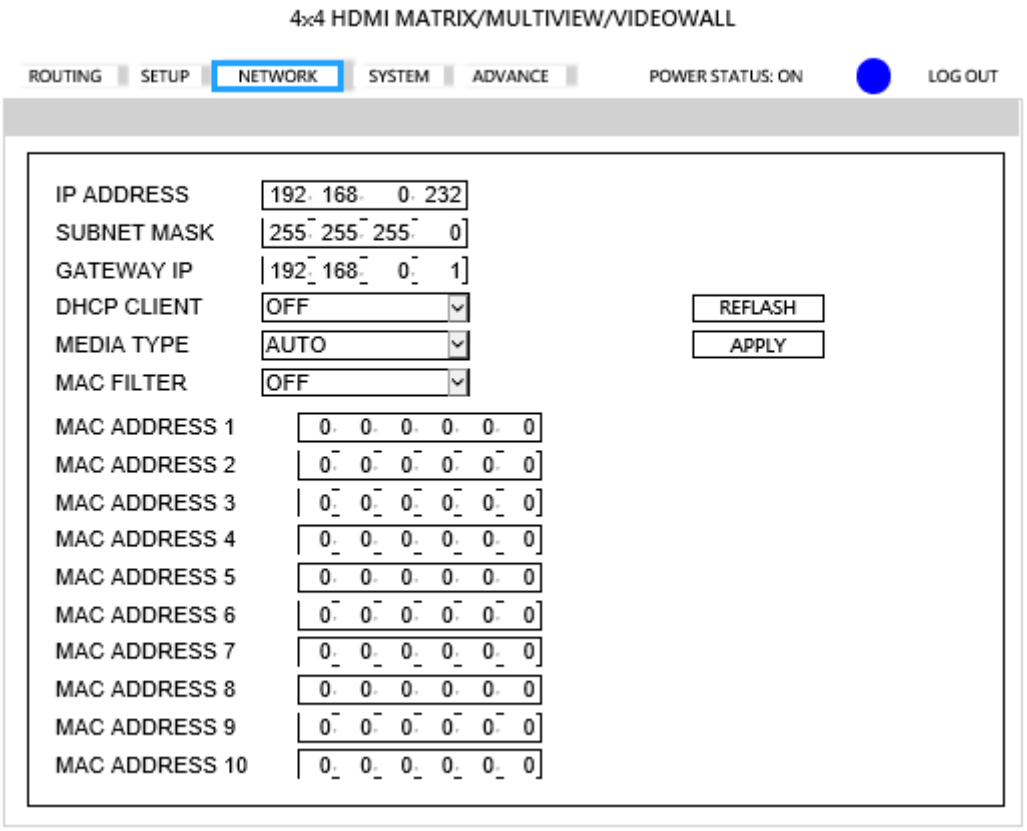


SETUP



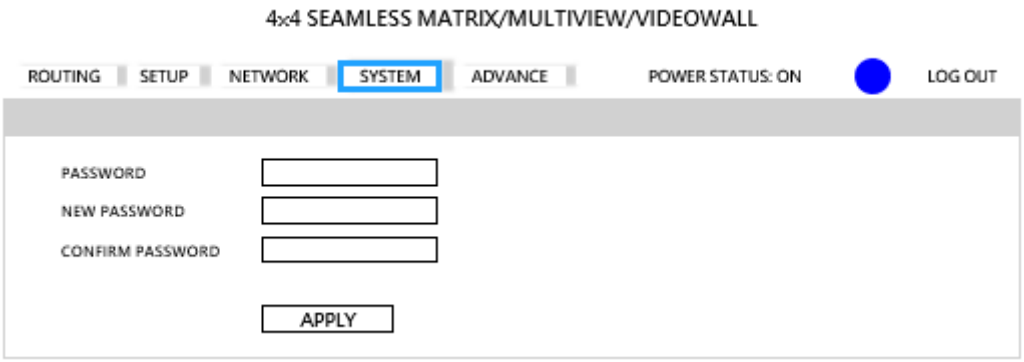
- OUTPUT RESOLUTION：Support 480P, 576P, 720P50, 720P60, 1080P24, 1080P50, 1080P60,**Default 1080P60**, 1024x768, 1280x800, 1280x1024, 1366x768, 1440x900, 1600x1200, 1680x1050, 1920x1200
- HDCP SETTING：Set HDCP always on or follow input.
- ID SETTING：Set DEVICE ID, **Default 0**, REMOTE ID, **Default 0**
- PICTURE SETTING：Set CONTRAST, BRIGHTNESS, SATURATION, HUE of output 1~4, **Default 50**
- OSD SETTING：Set MENU TIMEOUT, **Default 20s**, INFO TIMEOUT, **Default 5s,** INFO POSITION, **Default LEFT TOP**, INFO DISPLAY, **Default ON**
- REFRESH：Refresh the information of host
- APPLY：Apply changes

NETWORK



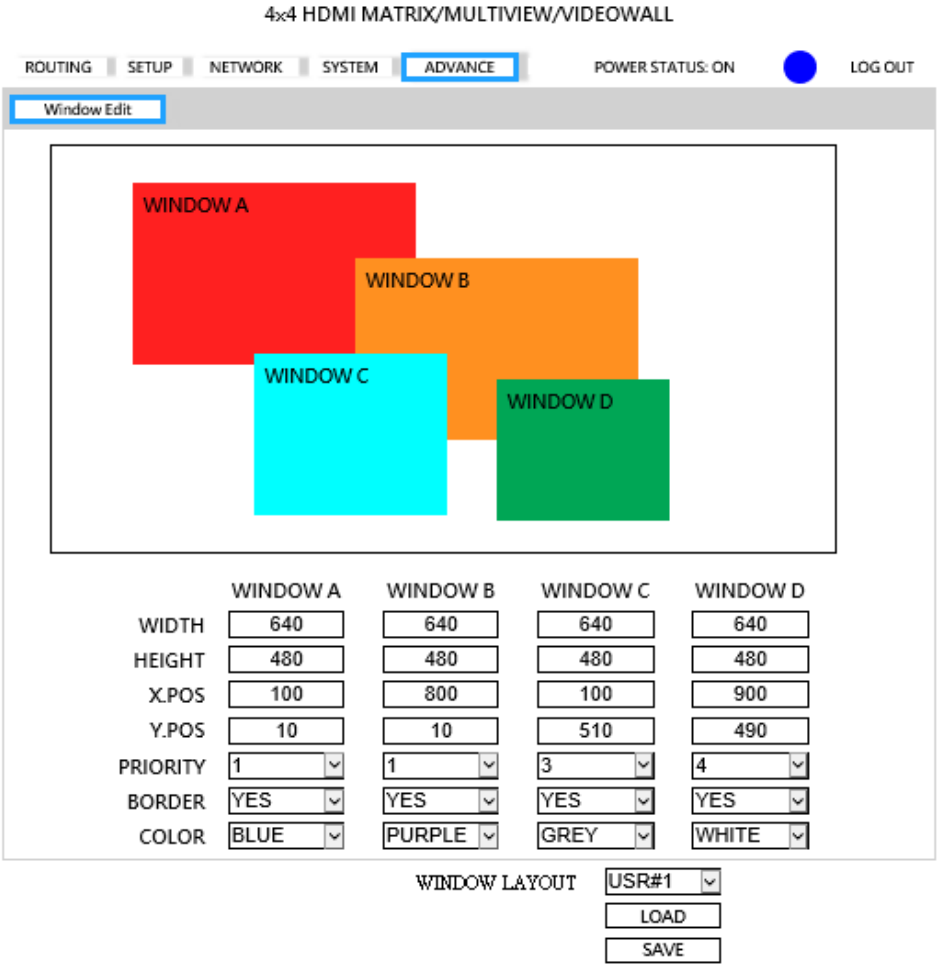
- IP ADDRESS：Set IP address, **Default 192.168.0.200**
- SUBNET MASK：Set Subnet mask, **Default 255.255.255.0**
- GATEWAY：Set gateway address, **Default 192.168.0.1**
- DHCP CLIENT：
  ON:Get IP Address, Subnet Mask, Gateway from existing DHCP server
  OFF:Set IP Address, Subnet Mask, Gateway by WebGUI or OSD menu manually, **Default OFF**
- MEDIA TYPE：Set link speed of Ethernet port to 10 / 100 / Auto detect, **Default AUTO**
- MAC FILTER**:** Add up to 10 registered MAC Address, only the MAC address which is in the list can be able to connect host by Ethernet, **Default OFF.**
- REFRESH：Refresh the information of host
- APPLY：Apply changes

SYSTEM



- PASSWORD：Enter old password, **Default 123**
- NEW PASSWORD：Enter new password
- CONFIRM PASSWORD：Enter new password again to confirm
- APPLY：Apply changes

ADVANCE



- WIDTH, HEIGHT: Set size of the windows.
- X.POS,Y.POS: Set top left position of window by x, y coordinate.
- PRIORITY: Set the priority of windows, 1 is top and 4 is bottom.
- BORDER: Select YES to show border of window, select NO to disable.
- COLOR: Set color of border.
- WINDOW LAYOUT：Select windows layout from user define 1~4 to load or save
- LOAD: Select windows layout from user define 1~4 to modify
- SAVE: Save windows layout to user define 1~4 after change the value

RS232 remote control command:

Connect the RS232 CONSOLE port to the COM port of the host by an F/M RS232 straight cable (pin 2 to pin 2; pin 3 to pin 3, pin 5 to pin 5)

Communication format is 9600, 8, N, 1 (9600 bps, 8 data bits, no parity check, 1 stop bit)

Operation Instruction format:

Command + △(Space) + Parameter + Enter

[Command]	[Description]
POWER△[y]	Power on / standby
SMTX[n]△[n]	Set Seamless MATRIX OUTPUT n from INPUT n
MVTX[n]△[n]	Set MULITVIEWER OUTPUT n from INPUT n
VDWALLRX△[n]	Set VIDEOWALL from INPUT n
SMADOTX[n]△[n]	Set Seamless MATRIX OUTPUT n audio source from INPUT n
MVADOTX[n]△[n]	Set MULTIVIEWER OUTPUT n audio source from INPUT n
VDWALADOLRX△[n]	Set VIDEOWALL audio source from INPUT n
OUTRES △[a]	Set output resolution
DHCP△[y]	DHCP client on/off
IP_ADDRESS△[x.x.x.x]	Set IP address
SUBNET_MASK△[x.x.x.x]	Set subnet mask
GATEWAY△[x.x.x.x]	Set gateway
MEDIA_TYPE△[z]	Set Ethernet link speed
MAC_FILTER△[y]	Mac filter on/off
IR_ID△[p]	Set host IR remote ID
DEFAULT	Set host to factory default
HELP	Help

[Symbol]	[Parameter]	
a	01=480P	09=1024x768
	02=576P	0A=1280x1024
	03=720P50	0B=1366x768
	04=720P60	0C=1440x900
	05=1080P24	0D=1600x1200
	06=1080P50	0E=1680x1050
	07=1080P60	0F=1920x1200
	08=1024x768	
n	00=off, 01~04=1~4, 05=follow	
p	00~09=0~9	
x	0~255	
y	00=standby, 01=on	
z	00=auto, 01=10M, 02=100M	

Example:

-To power on:

POWER△01

-To route seamless MATRIX video source output 1 from input 4, send the following string:
SMTX01△04

-To route MULTIVIEWER windows 2 video source from input 3, send the following string:
MVTX02△03

-To route VIDEOWALL video source from input 2, send the following string:
VDWALLRX△02

-To route MULTIVIEWER output 3 audio source from input 2, send the following string:
MVADOTX03△02

-To route VIDEOWALL audio source from input 1, send the following string:
VDWALLRX△01

Commands are **case insensitive**.
The host will reply **OK** once string is correct, **NG** in case of incorrect string

Specification:

ITEM NO.	**HM44**
Resolution	480i/p, 576i/p, 720p, 1080i/p@60Hz
HDMI Input	HDMI Type A x 4
HDMI Output	HDMI Type A x 4
Ethernet Connector	RJ45 x 1
RS232 Connector	DB9 Male x 1 (Console)
IR Carrier	± 45 degree
Power Supply	DC 12V 4.16A
Power Consumption	2A (Max)
Temperature	Operation: 0 to 55℃, Storage: -20 to 85℃, Humidity: up to 95%
Dimensions mm	483 x 177 x 44
Weight g	2300

RoHS CE FC

Rev. A V1.00 170427