

# 4x4 HDMI Matrix



Model: **MAX-HDMI44A-G**

rev.10032017

# User Operation Guide

## PRODUCT DESCRIPTION

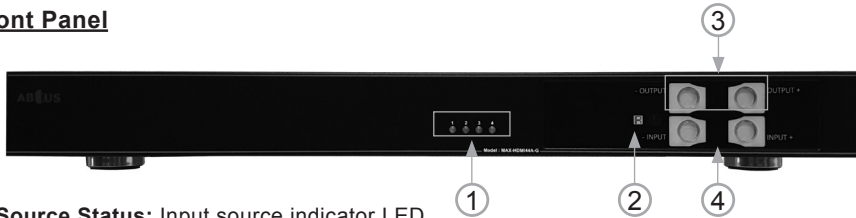
The **MAX-HDMI44A-G** 4x4 HDMI Matrix Switcher with Full 3D Support provides the most flexible and cost effective solution in the market to route high definition video sources plus multi-channel (up to 7.1-channel) digital audio from any of the four HDMI sources to the remote displays at the same time. This solution is well suited for use in home theater, conference room presentation systems, or other similar setting or application.

## FEATURES

- Support HDMI Deep Color & full 3D
- HDCP compliant
- Allows any source to be displayed on multiple displays at the same time
- Allows any HDMI display to view any HDMI source at any time
- Supports 7.1 channel digital audio
- Supports default HDMI EDID and learns the EDID of displays
- The matrix can switch every output channels to any HDMI inputs by push-in button, IR remote control, RS-232 control, and Ethernet control
- Easy installation with rack-mounting and wall-mounting designs for matrix and receiver respectively
- Fast response time – 2~5 seconds for channel switch

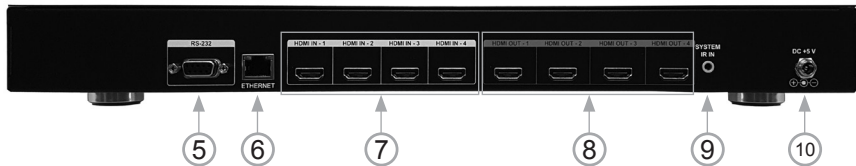
## PANEL DESCRIPTIONS

### Front Panel



1. **Source Status:** Input source indicator LED
2. **IR SENSOR:** IR sensor for receiving the IR commands from IR remote
3. **Output Push Button & 7-segment LED:** Front panel push buttons used to select the number of display channel & LED display for output ports
4. **Input Push Button & 7-segment LED:** Front panel push buttons used to select the number of input source & LED display for input channels

### Front Panel



5. **RS-232:** RS-232 control port
6. **Ethernet:** Ethernet control port
7. **INPUT 1-4:** HDMI inputs
8. **Output 1-4:** HDMI outputs
9. **System IR Receiver:** Ext. IR receiver
10. **+5V DC:** 5V DC power jack

## OPERATING SYSTEM

### Method A: Push-in Button



### 2. Save Mapping Mode

- 1) Keep pushing "output+ (save)" button until the output LED shows "d." to enter the Save Mapping Mode.
- 2) Use the "+" or "-" input push button to select the mapping configuration (1~8) that you want to save current input/output mapping
- 3) After you select the desired mapping configuration number, the LED will blink twice and the mapping setting will be saved
- 4) If you push the "output- (preset)" button before the mapping setting is saved, the LED will show "-" "-" to quit the Save Mapping Mode

### 4. Default EDID Mode

- 1) Push "input+ (default)" button to select the input channel which you want to learn default EDID and then keep pushing "input+ (default)" button when you select your desired input channel
- 2) Push the "+" or "-" output push button and then the LED will show "E""d" one time to enter Learn Default EDID Mode
- 3) Use "+" or "-" output push button to select the default EDID mode(1~8)
- 4) Release "input+ (default)" button after selecting the desired default EDID mode, and then the LED will blink twice and the setting will be effective
- 5) It will quit the Learn Default EDID Mode if you push the "input- (learn)" button before the setting is effective
- 6) The LED will show "0""0" if the setting is success  
The LED will show "F""F" if the setting is failure

### 1. IN/OUT MAP

- 1) Use the "+" or "-" output push button to select the display
- 2) Use the "+" or "-" input push button to select the input source  
"+": change selected input/output port in ascending order  
"-": change selected input/output port in descending order

After you have selected the desired input/output port, the LED will blink twice and the setting will be in effect.

### 3. Preset Mapping Mode

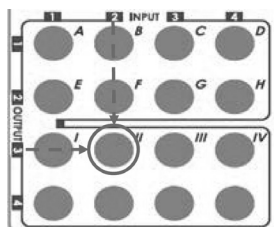
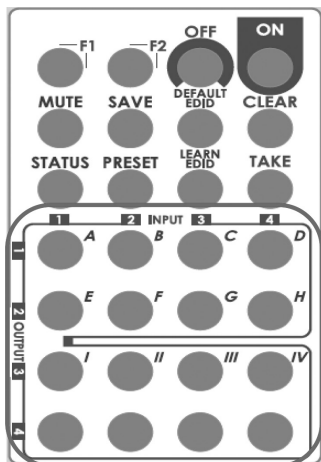
- 1) Keep pushing "output- (preset)" button until the output LED shows "P." to enter the Preset Mapping Mode.
- 2) Use the "+" or "-" input push button to select the saved mapping configuration (1~8) that you want to recall
- 3) After you select the desired mapping configuration number, the LED will blink twice and the mapping setting will be effective
- 4) If you push the "output+ (save)" button before the mapping setting is effective, the LED will show "-" "-" to quit the Preset Mapping Mode

### 5. EDID Learning Mode

- 1) Push "input- (learn)" button to select the input channel which you want to learn EDID from HDMI output and then keep pushing "input- (learn)" button when you select your desired input channel
- 2) Push the "+" or "-" output push button and then the LED will show "E""L" one time to enter Learn Output EDID Mode
- 3) Use "+" or "-" output push button to select the output port number
- 4) Release "input- (learn)" button after selecting the desired output port number, and then the LED will blink twice and the setting will be effective
- 5) It will quit the Learn Output EDID Mode if you push the "input+ (default)" button before the setting is effective
- 6) The LED will show "0""0" if the setting is success  
The LED will show "F""F" if the setting is failure

## OPERATING SYSTEM

### Method B: IR Remote Control



#### 1. IN/OUT Switch

Push the button on the checkerboard to select the Input & Output port.

Ex: Select Input 2 to Output 3

Push the circled button as below to select Input 2 to Output 3

#### 2. Function Key

Button	Function
OFF	Standby mode
ON	Power on the matrix switcher
STATUS	Preset output status
<b>MUTE</b>	MUTE Turn off output's video and audio
SAVE	Save current mapping mode
PRESET	Preset mapping mode
DEFAULT EDID	Begin default EDID selection
LEARN EDID	Begin EDID learning from one output
CLEAR	Clear the previous IR operation procedure
TAKE	Trigger the previous setting
F1	Reserved
F2	Reserved

# User Operation Guide

## OPERATING SYSTEM

Operation	Procedure	7-Segment LED
<b>Mute Output</b>	<b>Mute + A~D(Output 1~4) + Take</b>	
Ex: Mute Output 3	1. Press "MUTE" button	- 0
	2. Press number key "C" to select Output 3	3 0
	3. Press "TAKE" button	3 0
<b>Output Status</b>	<b>Status + A~D(Output 1~4) + Take</b>	
	1. Press "STATUS" button	- -
Ex: Output 4 (Input 2)	2. Press number key "D" to select Output 4	4 -
	3. Press "TAKE" button	4 2
<b>Save Current Mapping</b>	<b>Save + A~H(1-8 storage site) + Take</b>	
	1. Press "SAVE" button	d -
Ex: Save current mapping to 5	2. Press number key "E" to select the storage site 5	d 5
	3. Press "TAKE" button	
<b>Preset Mapping</b>	<b>Preset + A~H(1-8 storage site) + Take</b>	
	1. Press "PRESET" button	P -
Ex: Preset saved mapping from 5	2. Press number key "E" to select the storage site 5	P 5
	3. Press "TAKE" button	
<b>Learn default EDID</b>	<b>Default EDID + A~H(1-8 default EDID) + I ~ IV(input 1~4) + Take</b>	
	1. Press "DEFAULT EDID" button	E d 2
Ex: Default EDID 2 Input 3	2. Press number key "B" to select default EDID 2	d 2
	3. Press number key "III" to select	2 3
	4. Press "TAKE" button	0 0 (success)
		F F(fail)
<b>Learn Output EDID</b>	<b>Learn + A~D(Output 1~4) + I ~IV(input 1~4) + Take</b>	
	1. Press "LEARN" button	E L 4
Ex: Learn Output 4 Input 3	2. Press number key "D" to select Output 4	L 4
	3. Press number key "III" to select Input 3	4 3
	4. Press "TAKE" button	0 0 (success)
		F F(fail)

# User Operation Guide

## EDID LEARNING

The EDID learning function is only necessary whenever you encounter any display on the HDMI output port that cannot play audio and video properly. Because the HDMI source devices and displays may have various level of capability in playing audio and video, the general principle is that the source device will output the lowest standards in audio format and video resolutions to be commonly acceptable among all HDMI displays. In this case, a 720p stereo HDMI signal output would be probably the safest choice. Nevertheless, the user can force the matrix to learn the EDID of the lowest capable HDMI display among others to make sure all displays are capable to play the HDMI signals normally.

There are THREE methods to do EDID Learning as below,

1. Front Panel Push-in Button:

Please refer to the Operation Approach\ Method A: Push-in Button (Page 3)

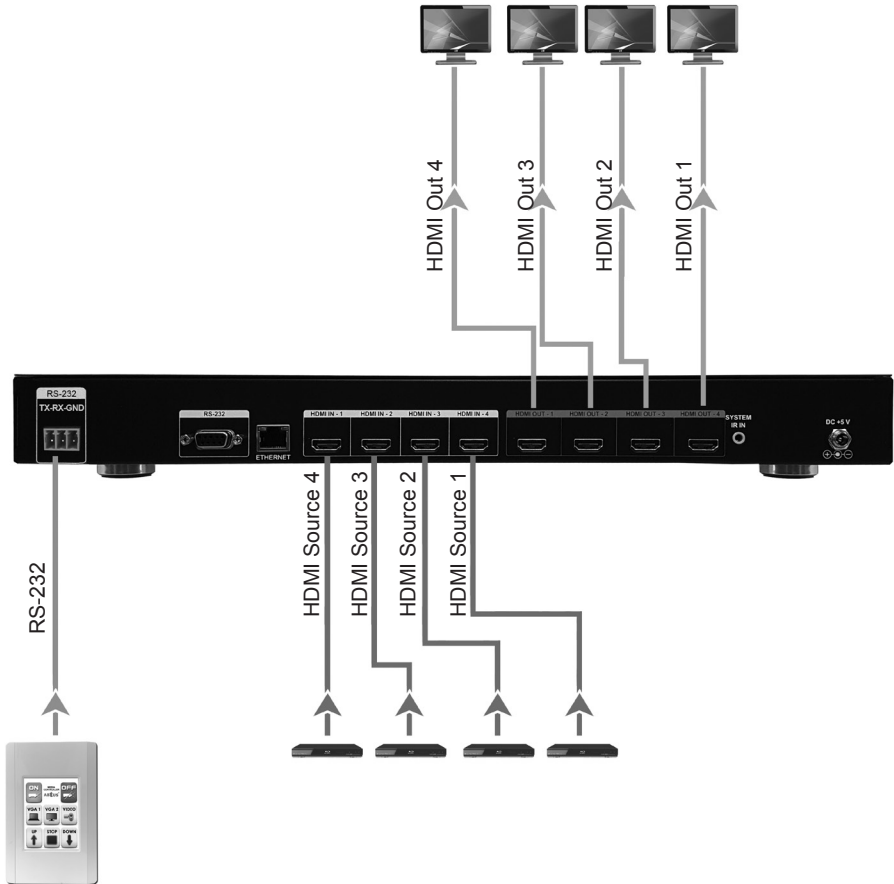
2. IR Remote Control:

Please refer to the Operation Approach\ Method B: IR Remote Control (Page 5.)

There are eight embedded default EDID as below,

1. Full-HD(1080p@60)-24bit 2D & 2ch
2. Full-HD(1080p@60)-24bit 2D & 7.1ch
3. Full-HD(1080p@60)-24bit 3D & 2ch
4. Full-HD(1080p@60)-24bit 3D & 7.1ch
5. HD(1080i@60)(720p@60)-24bit 2D & 2ch
6. HD(1080i@60)(720p@60)-24bit 2D & 7.1ch
7. Full-HD(1080p@60)-36bit 2D & 2ch
8. Full-HD(1080p@60)-36bit 2D & 7.1ch

DIAGRAM



## SPECIFICATIONS

<b>INPUT:</b>	4 × HDMI 1 × RS-232 1 × Ethernet 1 × IR socket for IR receiver
<b>OUTPUT:</b>	4 × HDMI
<b>HDMI INPUT SELECTION:</b>	Push-in button / IR remote control / RS-232 control / Ethernet control
<b>IR REMOTE CONTROL:</b>	Electro-optical characteristics: $\pi = 25^\circ$ / Carrier frequency: 38kHz
<b>HDMI CONNECTOR:</b>	Type A [19-pin female]
<b>RJ-45 CONNECTOR:</b>	WE/SS 8P8C with 2 LED indicators
<b>RS-232 CONNECTOR:</b>	DE-9 [9-pin D-sub female]
<b>HDMI COMPLIANCE</b>	HDMI Deep Color & full 3D
<b>HDCP COMPLIANCE</b>	Yes
<b>VIDEO BANDWIDTH</b>	Single-link 225MHz [6.75Gbps]
<b>VIDEO SUPPORT</b>	480i / 480p / 720p / 1080i / 1080p60 up to 36-bit color
<b>AUDIO SUPPORT</b>	Surround sound (up to 7.1ch) or stereo digital audio
<b>ESD PROTECTION</b>	[1] Human body model — $\pm 19\text{kV}$ [air-gap discharge] & $\pm 12\text{kV}$ [contact discharge] [2] Core chipset — $\pm 8\text{kV}$
<b>PCB STACK-UP</b>	4-layer board [impedance control — differential 100 $\Omega$ ; single 50 $\Omega$ ]
<b>FIXEDNESS</b>	1RU rack-mount with ears and Wall hanging holes
<b>POWER SUPPLY</b>	5V 4A DC
<b>POWER CONSUMPTION</b>	20 Watts [max]
<b>OPERATION TEMPERATURE</b>	0~40°C [32~104°F]
<b>STORAGE TEMPERATURE</b>	-20~60°C [-4~140°F]
<b>RELATIVE HUMIDITY</b>	20~90% RH [no condensation]
<b>HOUSING:</b>	Metal case
<b>GROSS DIMENSION:</b>	524 × 265 × 76 mm
<b>GROSS WEIGHT:</b>	4.5 kg

**ABtUS**  
S I N G A P O R E