



## 8x8 HDMI Matrix Switcher with Full 3D Support



P/N: AV-GM07X3-S1



## Safety and Notice

The **AV-GM07X3-S1 8x8 HDMI Matrix Switcher with Full 3D Support** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM07X3-S1** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



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# INTRODUCTION

The **AV-GM07X3-S1 8x8 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 master 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 master and receiver respectively
- Fast response time – 2~5 seconds for channel switch

## PACKAGE CONTENTS

- 1x AV-GM07X3-S1
- 1x IR Receiver
- 1x DC 12V 5A
- 1x IR Remote control\*
- 1x Rack-mounting ear set
- 1x Installation software CD
- 1x User Manual



\* Additional IR remote controllers can be purchased as optional accessories to control the HDMI sources located separately.

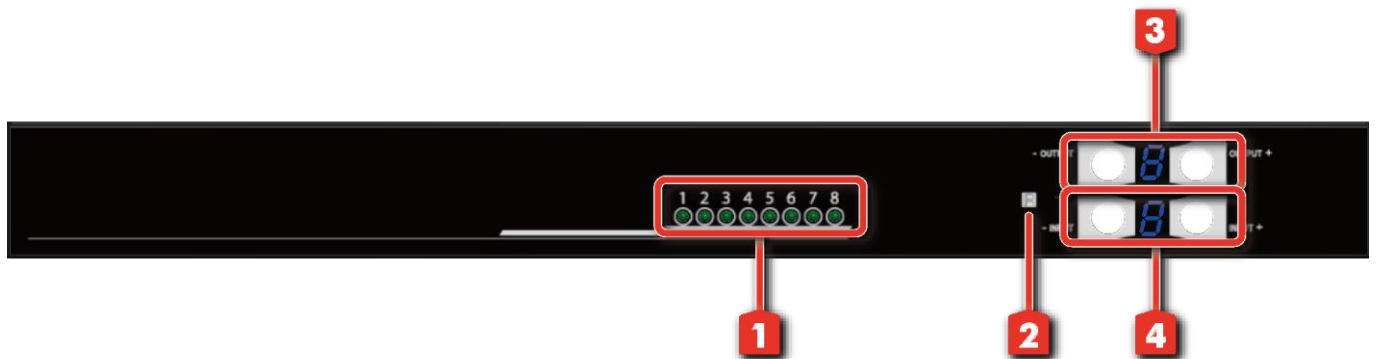
## SPECIFICATIONS

Model Name		AV-GM07X3-S1
<b>Technical</b>		
Role of usage	True 8x8 matrix	
HDMI compliance	HDMI Deep Color & full 3D	
HDCP compliance	Yes	
Video bandwidth	Single-link 225MHz [6.75Gbps]	
Video support	480i / 480p / 720p / 1080i / 1080p60 36-bit color	
Audio support	Surround sound (up to 7.1ch) or stereo digital audio	
ESD protection	[1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±8kV	
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	8x HDMI / 1x RS-232 / 1x Ethernet / 1x IR socket for IR receiver	
Output	8x HDMI	
HDMI Input selection	Push-in button / IR remote control / RS-232 control / Ethernet control	
IR remote control	Electro-optical characteristics: $\theta = 25^\circ$ / Carrier frequency: 38kHz	
HDMI connector	Type A [19-pin female]	
RJ-45 connector	WE/SS 8P8C with 2 LED indicators	
RS-232 connector	DE-9 [9-pin D-sub female]	
3.5mm connector	[System IR] Receives IR commands from remote control	
<b>Mechanical</b>		<b>AV-GM07X3-S1</b>
Enclosure		Metal case
Dimensions (L x W x H)	Model	440 x 149 x 41 mm [17" x 5.9" x 1.6"]
	Package	524 x 265 x 76 mm [1'7" x 10.4" x 3"]
	Carton	542 x 411 x 300 mm [1'8" x 1'3" x 11.8"]
Weight	Model	2033g [71.7oz]

	Package	3062g [6.8 lbs]
Fixedness		1RU rack-mount with ears Wall hanging holes
Power supply		12V 5A DC
Power consumption		[max]
Operation temperature		0~40°C [32~104°F]
Storage temperature		-20~60°C [-4~140°F]
Relative humidity		20~90% RH [no condensation]

## 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 channel

### Rear Panel



5. **+12V DC:** 12V DC power jack
6. **Ethernet:** Ethernet control port
7. **RS-232:** RS-232 control port
8. **System IR Receiver:** Ext. IR receiver
9. **INPUT 1-8:** HDMI inputs
10. **OUTPUT 1-8:** HDMI outputs

# IR PASS-THROUGH

## IR Receiver



## Sockets

### AV-GM07X3-S1

**System IR:** Receives IR commands from remote control

*Incorrect placement of IR Blaster and Receiver may result in the failure of the IR extenders. Please check carefully before plugging in the IR extender to the respective IR sockets. Warranty will not cover the damage.*

## Definition of IR Earphone Jack

IR Receiver

1. IR Signal [34-40 kHz]
2. Grounding
3. Power





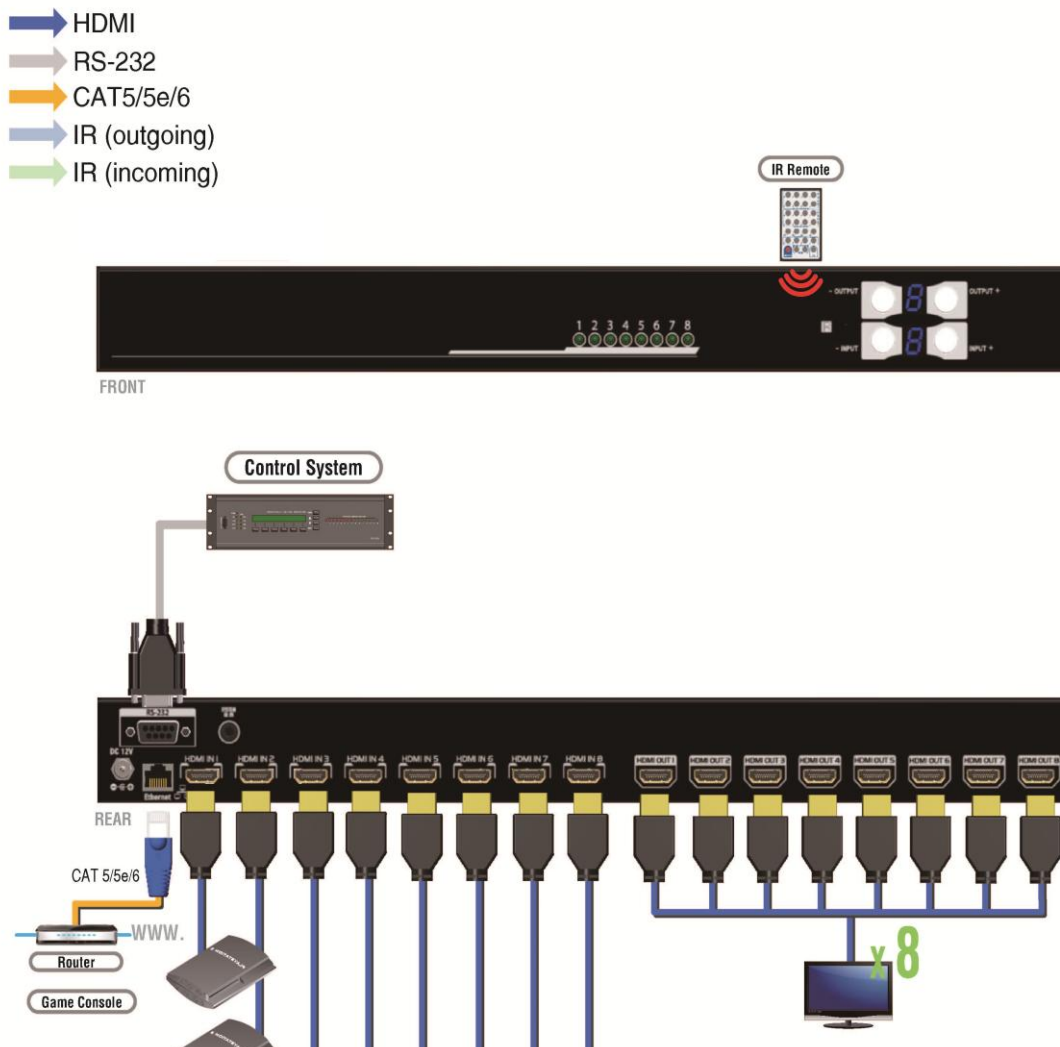
You can buy any IR extension cables in the market that are compatible to the definition of the IR sockets for the matrix if necessary for replacement use. However, IR cables longer than 2m (6-ft) may not work.

## HARDWARE INSTALLATION

### AV-GM07X3-S1 as master

1. Connect all sources to HDMI Inputs on the 8x8 HDMI matrix master AV-GM07X3-S1.
2. Connect each output port on the AV-GM07X3-S1 to respective input
3. Connect IR blaster to the AV-GM07X3-S1 and direct the IR blaster to point towards the built-in IR receiver of the HDMI source devices.
4. Connect the +12V 5A DC power supply to the AV-GM07X3-S1.
5. Power on all HDMI sources.

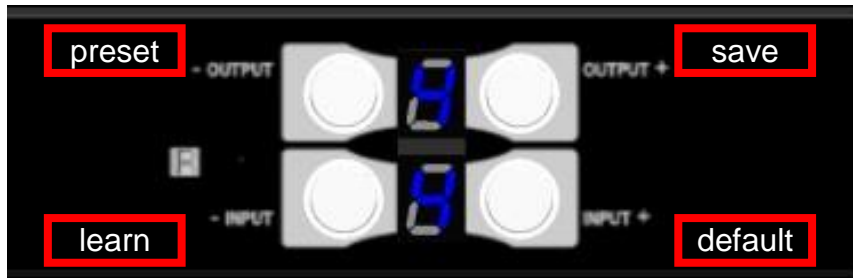
## CONNECTION DIAGRAM





# OPERATION APPROACH

## Method A: Push-in Button



### 1. IN/OUT MAP

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

After you select the desired input/output port, the LED will blink twice and the setting will be effective

### 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 (0~7) which 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

### 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 (0~7) which 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

### 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

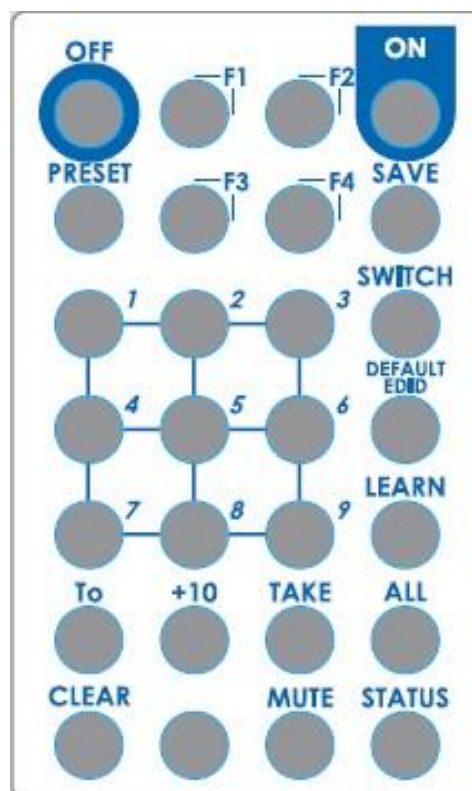
- 2) Push the "+" or "-" output push button and then the LED will show "E""d" one time to enter Learn Default EDID Mode
- 3) Use "+" or "-" output push button to select the default EDID mode(1~8)
- 4) Release "input+(default)" button after selecting the desired default EDID mode, and then the LED will 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

## 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

## Method B: IR Remote Control

Button	Function
ON	Power on the matrix switcher
OFF	Standby mode
MUTE	Turn off output's video and audio
PRESET	Preset mapping mode
SAVE	Save current mapping mode
Number buttons 1-9	Select a number
+10	Reserved
To	Transfer key
TAKE	Trigger the previous setting
SWITCH	Begin input and output selection
DEFAULT EDID	Begin default EDID selection
LEARN	Begin EDID learning from one output



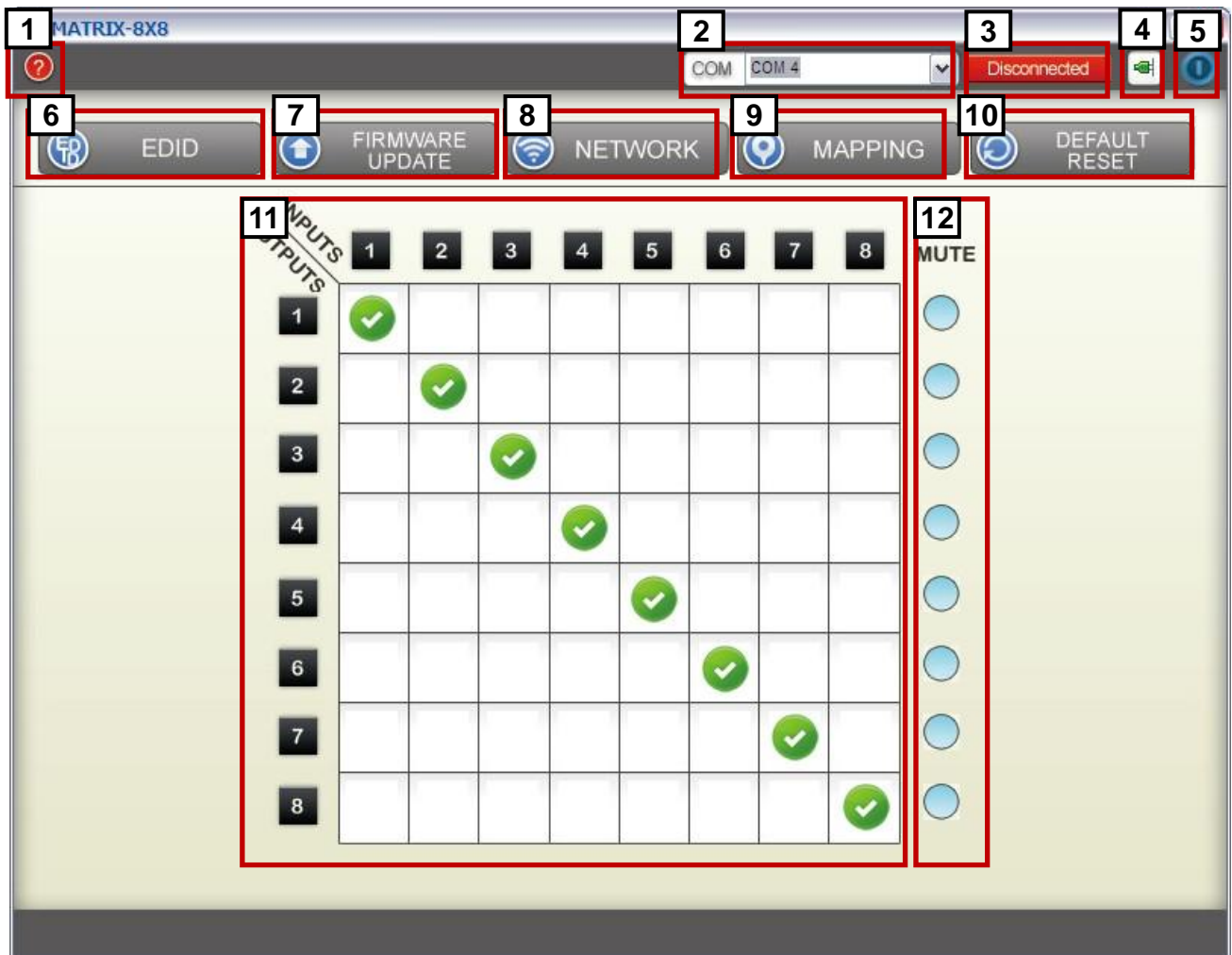
ALL	Select all inputs or outputs
CLEAR	Clear the previous IR operation procedure
STATUS	Preset output status
F1	Reserved
F2	Reserved
F3	Reserved
F4	Reserved

Operation	Procedure	7-Segment LED
<b>IN/OUT Switch</b>	Switch + number(input) + To + number(output) + Take	
Ex: Input 3 To Output 4	1.Press "SWITCH" button	-
	2.Press number key "3" to select Input	3
	3.Press "To" button	-
	4.Press number key "4" to select Output	4
	5.Press "TAKE" button	3
	Switch + number(input) + To + All(output) + Take	
Ex: Input 3 To Output All	1.Press "SWITCH" button	-
	2.Press number key "3" to select Input	3
	3.Press "To" button	-
	4.Press "ALL" to select All Output	A
	5.Press "TAKE" button	3
<b>Output Status</b>	Status + number(output) + Take	
Ex: Output 4 (Input 2)	1.Press "STATUS" button	-
	2.Press number key "4" to select Output	4
	3.Press "TAKE" button	2
<b>Factory Reset</b>	Status + Status + Status + Take	
	1.Press "STATUS" button	-
	2.Press "STATUS" button	d
	3.Press "STATUS" button	d
	4.Press "TAKE" button	1
<b>Learn default EDID</b>	Default EDID + number(1-8 default EDID) + To + number(input) + Take	
Ex: Default EDID 2 Input 3	1.Press "DEFAULT EDID" button	E
	2.Press number key "2" to select default EDID	d
	3.Press "To" button	d
	4. Press number key "3" to select Input	3
	5.Press "TAKE" button	0 (success)    F (fail)

	Default EDID + <b>number(output)</b> + To + <b>All(input)</b> + Take	
Ex: Default EDID 2 Input All	1.Press "DEFAULT EDID" button	E d
	2.Press number key "2" to select default EDID	2 d
	3.Press "To" button	2 d
	4.Press "ALL" to select All Input	2 A
	5.Press "TAKE" button	0 0 (success)    F F(fail)
<b>Learn Output EDID</b>	Learn + <b>number(output)</b> + To + <b>number(input)</b> + Take	
Ex: Learn Output 2 Input 3	1.Press "LEARN" button	E L
	2.Press number key "2" to select Output	2 L
	3.Press "To" button	2 L
	4. Press number key "3" to select Input	2 3
	5.Press "TAKE" button	0 0 (success)    F F(fail)
	Learn + <b>number(output)</b> + To + <b>All(input)</b> + Take	
Ex: Learn Output 2 Input All	1.Press "LEARN" button	E L
	2.Press number key "2" to select Output	2 L
	3.Press "To" button	2 L
	4.Press "ALL" to select All Input	2 A
	5.Press "TAKE" button	0 0 (success)    F F(fail)
<b>Save Current Mapping</b>	Save + <b>number(1-8 storage site)</b> + Take	
Ex: Save current mapping to 5	1.Press "SAVE" button	d -
	2.Press number key "5" to select the storage site	5 -
	3.Press "TAKE" button	
<b>Preset Mapping</b>	Preset + <b>number(1-8 storage site)</b> + Take	
Ex: Preset saved mapping from 5	1.Press "PRESET" button	P -
	2.Press number key "5" to select the storage site	5 -
	3.Press "TAKE" button	
<b>Mute Output</b>	Switch + <b>Mute</b> + To + <b>number(output)</b> + Take	
Ex: Mute Output 3	1.Press "SWITCH" button	- -
	2. Press "MUTE" button	- 0
	3.Press "To" button	- 0
	4. Press number key "3" to select Output	3 0
	5.Press "TAKE" button	3 0

	Switch + Mute + To + All(output) + Take	
Ex: Mute All Output	1.Press "SWITCH" button	-
	2. Press "MUTE" button	0
	3.Press "To" button	-
	4. Press "ALL" to select all output	A 0
	5.Press "TAKE" button	4 0


### Method C: Software Control through RS-232 port

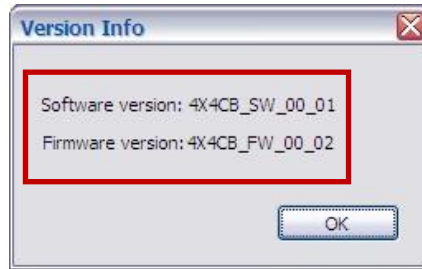


- 1 FW/SW Version Button
- 2 COM Port Selection
- 3 Connection Status
- 4 Connect/Disconnect Button
- 5 Power On/Off Button
- 6 EDID Button


- 7 Firmware Update Button
- 8 Network Button
- 9 Mapping Button
- 10 Default Reset Button
- 11 In/Out Switch Button
- 12 Mute Output Button

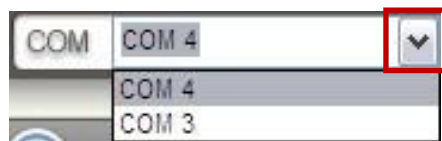
## 1. FW/SW Version Button

Click “” button to show version information



## 2. COM Port Selection

Click “” button to select COM Port



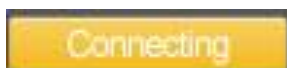
## 3. Connection Status



1) Connected Status:




2) Connecting Status:



3) Disconnected Status:



## 4. Connect/Disconnect Button


Click this button “” to change connection status



## 5. Power On/Off Button

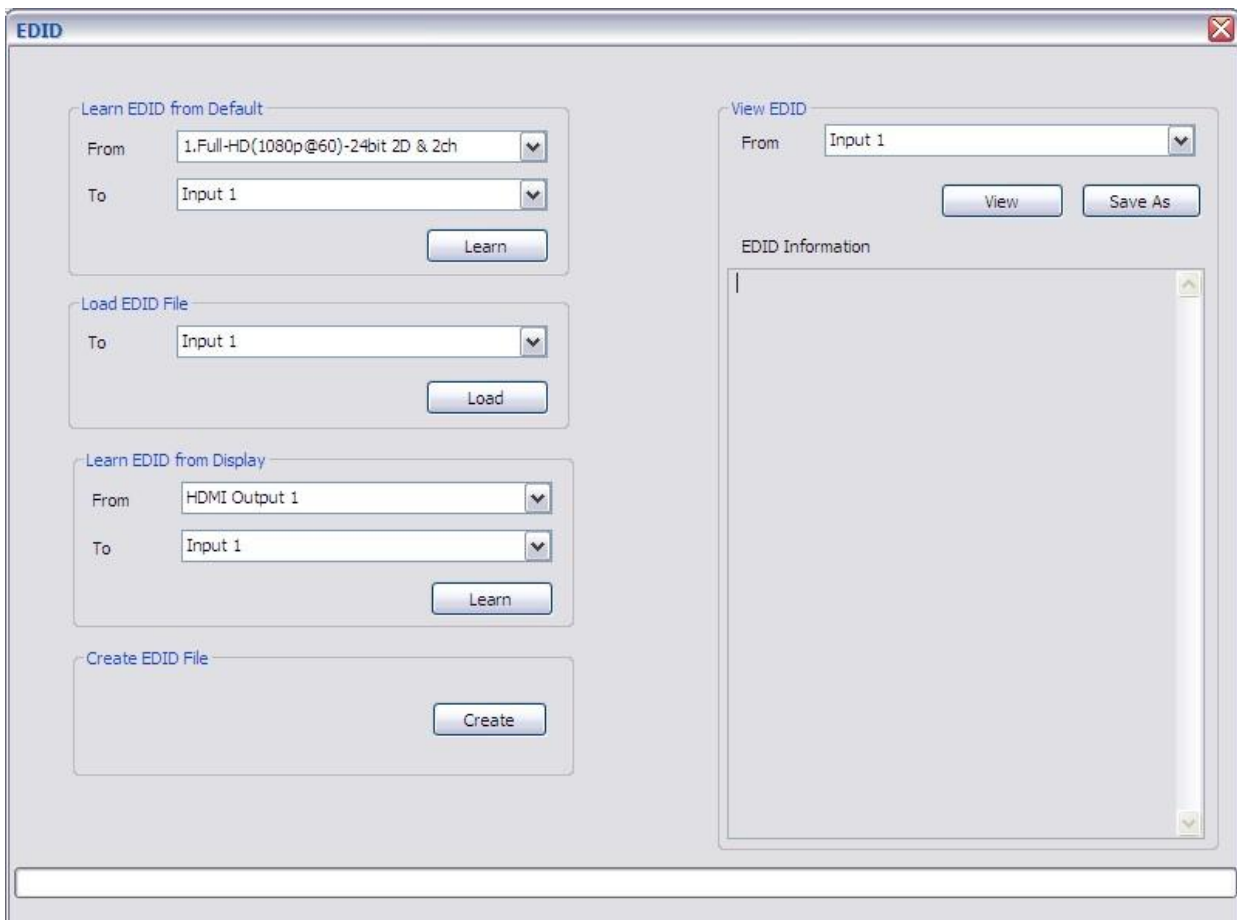
Click this button to power on/off



“” Power on status(Blue): Click this button to power off device(Standby Mode)

“” Power off status(Red): Click this button to power on device

## 6. EDID Button



- 1) Learn EDID from Default
  - a) Select Default EDID(1-8 Default EDID)
  - b) Select Input
  - c) Click “Learn” button to learn default EDID
- 2) Load EDID File to Input

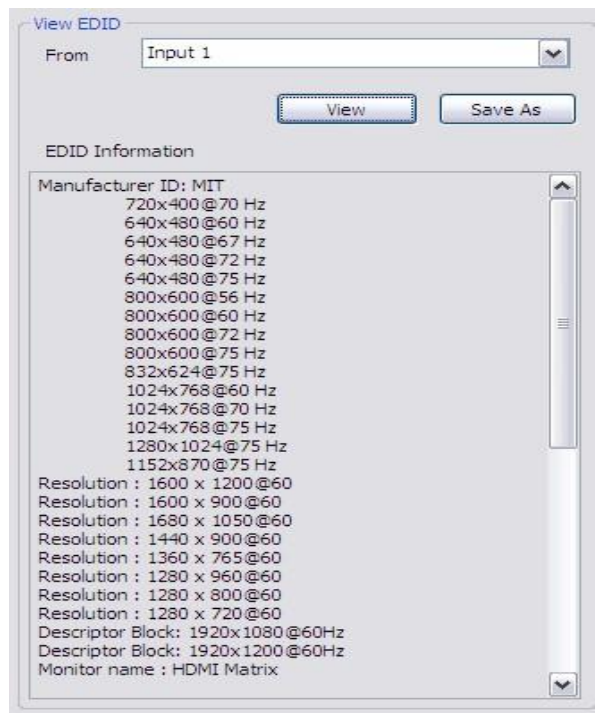
- a) Select Input
  - b) Click "Load" button to select the EDID file
- 3) Learn EDID From Display
- a) Select HDMI output
  - b) Select Input
  - c) Click "Learn" button to learn display EDID
- 4) Create EDID File
- a) Click "Create" button to create EDID file

The screenshot shows a software window titled "Create EDID File". It contains several configuration panels:

- HDTV**: Resolution: 480i, Aspect: 4:3, with an "Add" button.
- 3D Support**:  Activates 3D, Resolution: 1280x720p @ 23.98/24Hz, Format: Frame Packing, with "Add" buttons.
- VESA**: Resolution: 1024x768, Frequency: 60Hz, with an "Add" button.
- Audio**: Audio Type: Stereo, Content: 44.1kHz, with an "Add" button.
- Monitor Name**: A text input field with "(13 Character)" next to it.
- EDID Content**: A large empty text area with scrollbars, a "Clear All" button, and a "Save EDID on Computer" button.

- b) Select the EDID content
  - c) Click "Save EDID on Computer" to save the generated EDID as a file
- 5) View EDID content
- a) Select Input, HDMI output, or From File
  - b) Click "View" button to read the EDID and analysis





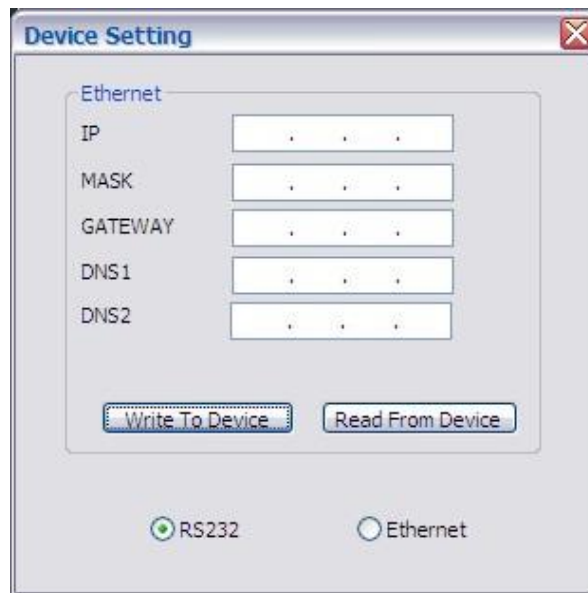
c) Click "Save As" to save the read EDID as a file on computer

## 7. Firmware Update Button



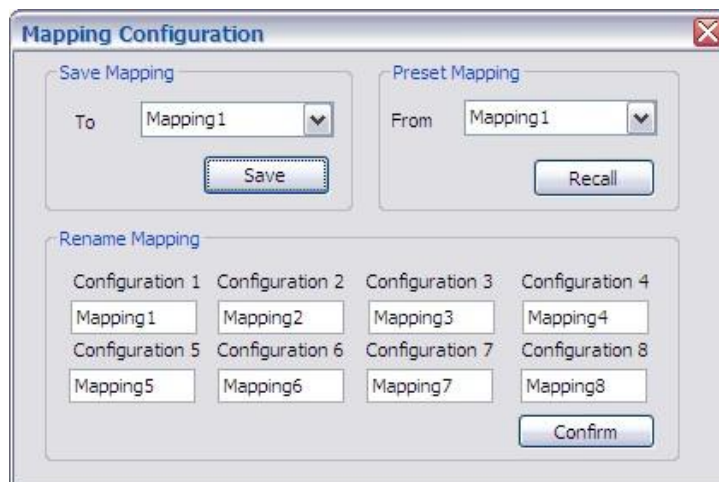
- 1) Click "Load File" to select the firmware file which you want to update
- 2) Click "Break" button
- 3) Quickly remove and reconnect the power input connector
- 4) Click "Start" button to begin the firmware update

## 8. Network Button



- 1) Click "Read From Device" to read the device IP address
- 2) Select "Ethernet" and then will be a pop-up windows
- 3) Key in the device IP address to the pop-up windows
- 4) Close the pop-up windows
- 5) Click the connected button to connect

## 9. Mapping Button



- 1) Save Mapping:
  - a) Select Mapping(1-8)

b) Click "Save" button to save current mapping

2) Preset Mapping:

a) Select Mapping(1-8)

b) Click "Recall" button to recall previous mapping which are saved

3) Rename Mapping:

a) Rename the mapping(Mapping1-Mapping8)

b) Click "Confirm" button to confirm the change

## **10. Default Reset Button**

Click this button to do factory default reset

The default reset process will take about 80~90 seconds



# 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**
2. IR Remote Control: Please refer to the **Operation Approach\ Method B: IR Remote Control**
3. Software Control: Please refer to the **Operation Approach\ Method C: Software Control through RS-232 port**

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

# WARRANTY

The SELLER warrants the **AV-GM07X3-S1 8x8 HDMI & Full 3D Matrix** free from defects in the material and workmanship for 3 years from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 3 years warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surge. This warranty is offered by the SELLER for its BUYER with direct transaction only. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables and power adapters are limited to a 30 day warranty and must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. **Also, the technical information contained herein regarding the AV-GM07X3-S1 features and specifications is subject to change without further notice.**

## Support

For more info or tech support  
<http://www.siig.com/support>