



4x4 HDMI Scaler Matrix with Video Wall Function



P/N: AV-GM0833-S1



Safety and Notice

The **AV-GM0833-S1 4x4 HDMI Scaler Matrix with Video Wall Function** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM0833-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-GM0833-S1 4x4 HDMI™ Scaler Matrix with Video Wall Function** provides the most flexible and cost effective solution in the market. The new AV-GM0833-S1 can be used as a conventional matrix switch, routing up to 4 different HDMI video sources to any monitor independently or be used as video wall processor, splitting a chosen image from 4 sources to 4 displays. On top of that, it can work as "combo" gear, showing any individual input source in full-screen for any selected display while other displays are working in video wall mode.

FEATURES

- HDCP compliant
- 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 for channel switch
- Four HDMI outputs from 640x480 to 1920x1200
- Supports HDMI/ DVI input, from 640x480 to 1920x1080@60, interlaced or progressive
- Resize, position, zoom, rotation, fade-in fade-out output video
- Each HDMI output has an independent controllable display area
- User-selectable output settings, up to 1920x1200
- Image parameters and layouts are automatically saved in flash memory of the device and can be recalled for later use
- Several Image parameters and layouts can be saved in computers and can be loaded for later use
- Software control through RS-232 and Ethernet
- Firmware upgradable for support of new features and technology enhancements
- 1U size

PACKAGE CONTENTS

- 1x AV-GM0833-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 and IR blasters can be purchased as optional accessories to control the HDMI sources located separately.

SPECIFICATIONS

Model Name	AV-GM0833-S1	
Technical		
Role of usage	True 4x4 matrix	
HDCP compliance	Yes	
Video bandwidth	Single-link 225MHz [6.75Gbps]	
Video support	480i / 480p / 720p / 1080i / 1080p60 / 1920x1200@60Hz 30-bit color	
Video Format Support	HDMI/DVI	
Audio support	Surround sound (up to 7.1ch) or stereo digital audio	
ESD protection	Human body model — ±12kV [air-gap discharge] & ±8kV [contact discharge]	
Input	4x HDMI / 1x RS-232 / 1x Ethernet	
Output	4x HDMI / 2x USB	
Control	RS-232 / Ethernet / Front Panel	
Input TMDS signal	1.2 Volts [peak-to-peak]	
HDMI connector	Type A [19-pin female]	
USB connector	Type A for power supply	
RS-232 connector	DE-9 [9-pin D-sub female]	
RJ-45 connector	WE/SS 8P8C with 2 LED indicators	
Mechanical		
Enclosure	Metal case	
Dimensions (L x W x H)	Model	440 x 247 x 42mm [17.3" x 9.7" x 1.7"]
	Package	528 x 398 x 130mm [17" x 13" x 5.1"]
	Carton	570 x 580 x 260mm [22.4" x 22.8" x 10.2"]
Weight	Model	1322g [46.6oz]
	Package	4500g [9.9 lbs]
Fixedness	1U rack-mount with ears and Wall hanging holes	
Power supply	12V 5A DC	
Operation	0~40°C [32~104°F]	

temperature	
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]

HARDWARE INSTALLATION

Before Installation

- Put the product in an even and stable location. If the product falls down or drops, it may cause an injury or malfunction.
- Do not place the product in too high temperature (over 50°C), too low temperature (under 0°C) or high humidity.
- Use the DC power supply unit with correct specifications. If inappropriate power supply is used then it may cause a fire.
- Do not twist or pull by force ends of the cable. It can cause malfunction.

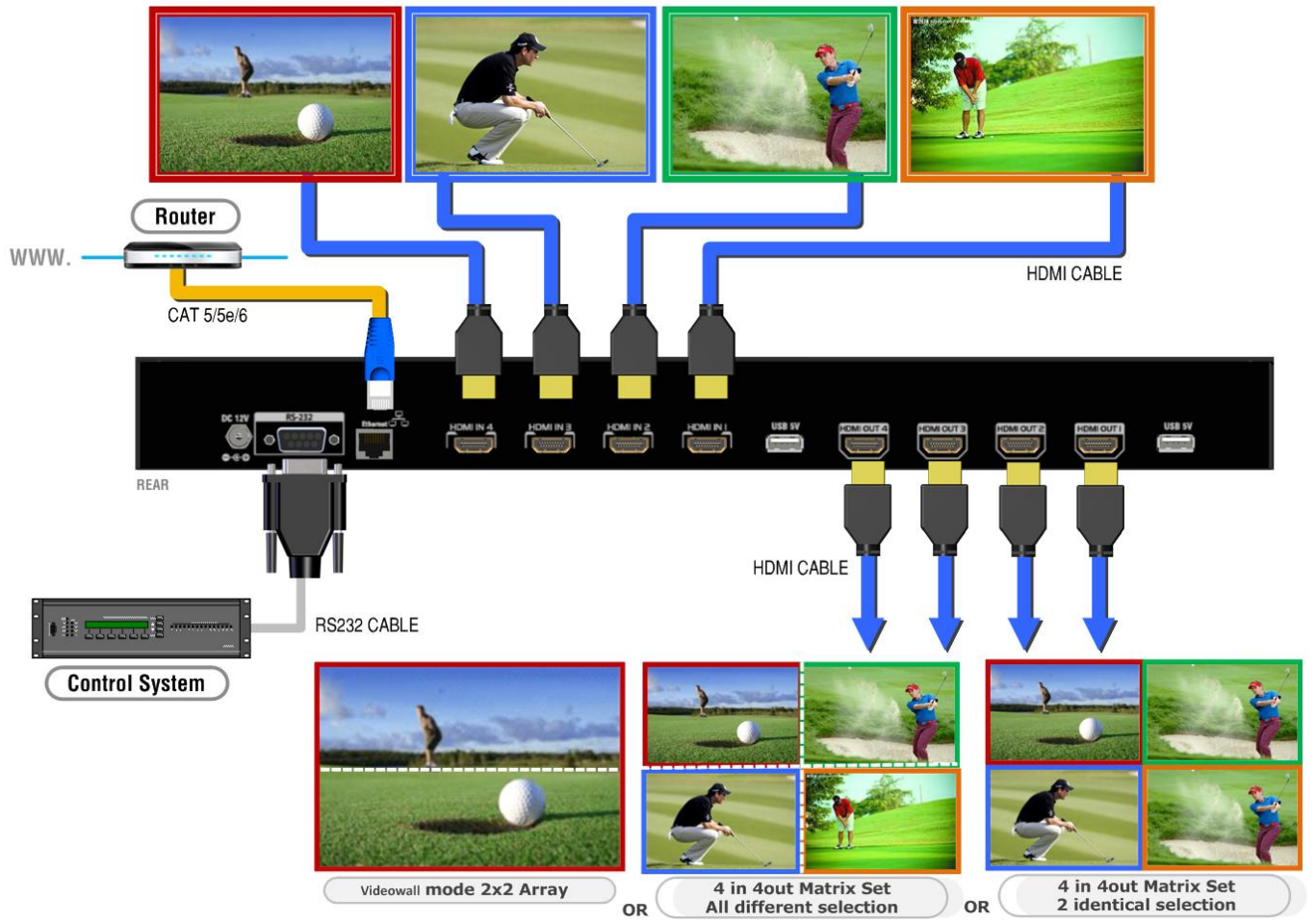
Hardware Installation

AV-GM0833-S1 as master

1. Connect all sources to HDMI Inputs on the 4x4 HDMI Matrix AV-GM0833-S1.
2. Connect all display to HDMI Outputs on the 4x4 HDMI Matrix AV-GM0833-S1.
3. Connect the +12V 5A DC power supply to the 4x4 HDMI Matrix AV-GM0833-S1.

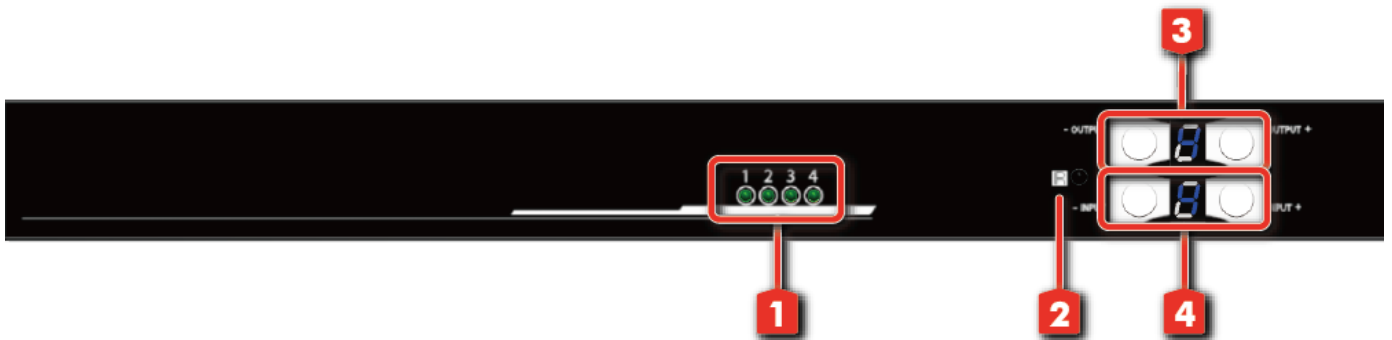
CONNECTION DIAGRAM

→ HDMI → CAT5/5e/6 → RS-232



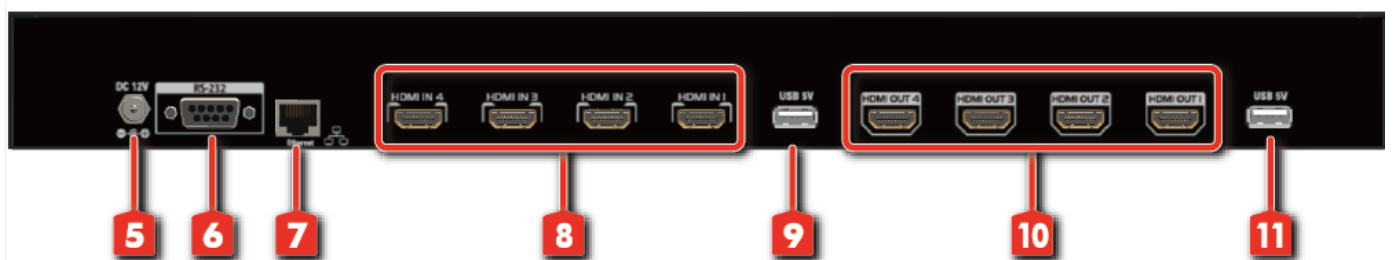
PANEL DESCRIPTIONS

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

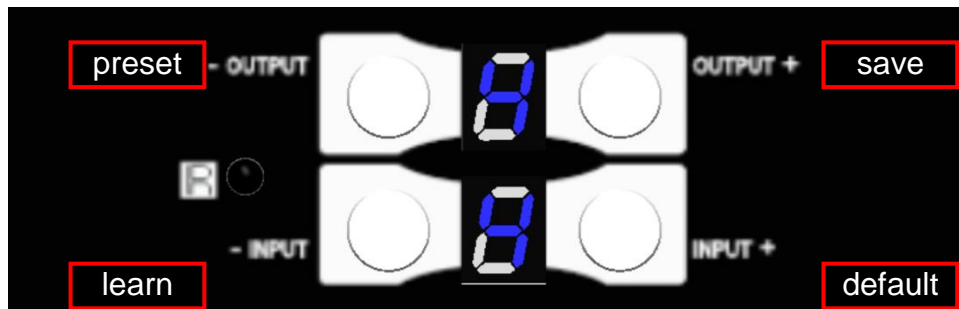
Rear Panel



5. **+12V DC:** 12V DC power jack
6. **RS-232:** RS-232 control port
7. **Ethernet:** Ethernet control port
8. **INPUT 1-4:** HDMI inputs
9. **USB 5V:** output 5v
10. **Output 1-4:** HDMI outputs
11. **USB 5V:** output 5v

OPERATION APPROACH

Method A: Mode Selection



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

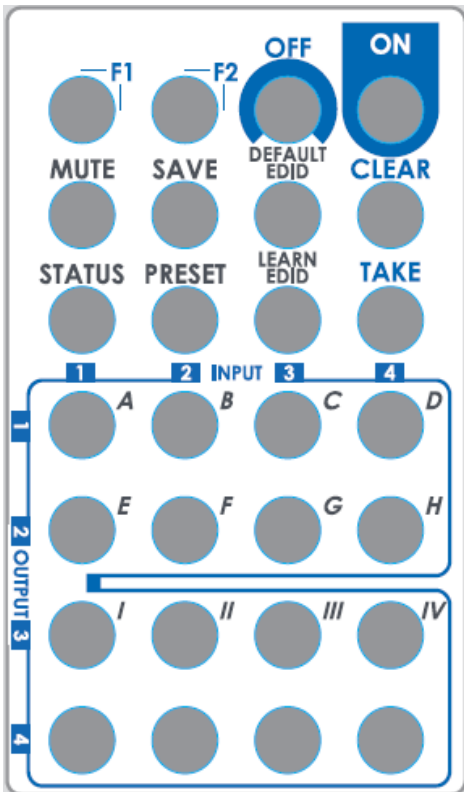
The LED will show "F""F" if the setting is failure

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



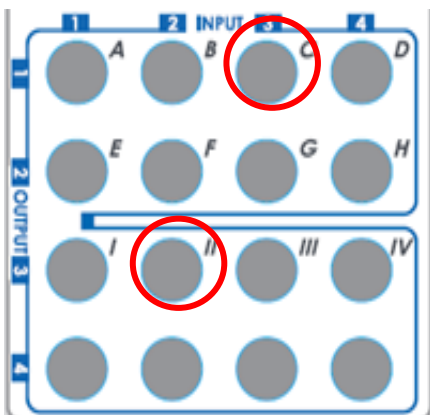
Button	Function
OFF	Standby mode
ON	Power on the matrix switcher
STATUS	Preset output status
MUTE	Turn off output's video and audio
SAVE	Save current mapping mode
PRESET	Preset mapping mode
DEFAULT EDID	Begin default EDID selection
LEARN EDID	Begin EDID learning from one output
CLEAR	Clear the previous IR operation procedure
TAKE	Trigger the previous setting
F1	Change all output to one input
F2*	Fast switch to Video Wall 2x2 or Video Wall 1x1

1. In /Out Switch

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

Ex: Select Input 2 to Output 3

- Press output number key "3" to select Output 3
- Press input number key "2" to select Input 2



2. Example of function key

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

		0 (success)	F(fail)
Select All Outputs to One Input Ex: All Outputs to Input 3	F1 + I~IV (input 1~4) + Take		
	1.Press "F1" button	A	-
	2. Press number key "III" to select Input 3	A	3
	3.Press "TAKE" button		
Video Wall Mode (2x2 and 1x1) Ex: 2x2 Video Wall mode on Input 3:	F2		
	1.Select all outputs to input 3 (F1+III+ Take)	A	3
	2. Press F2 to 2x2 mode	A	3
	3.Press F2 again back to 1x1 mode		

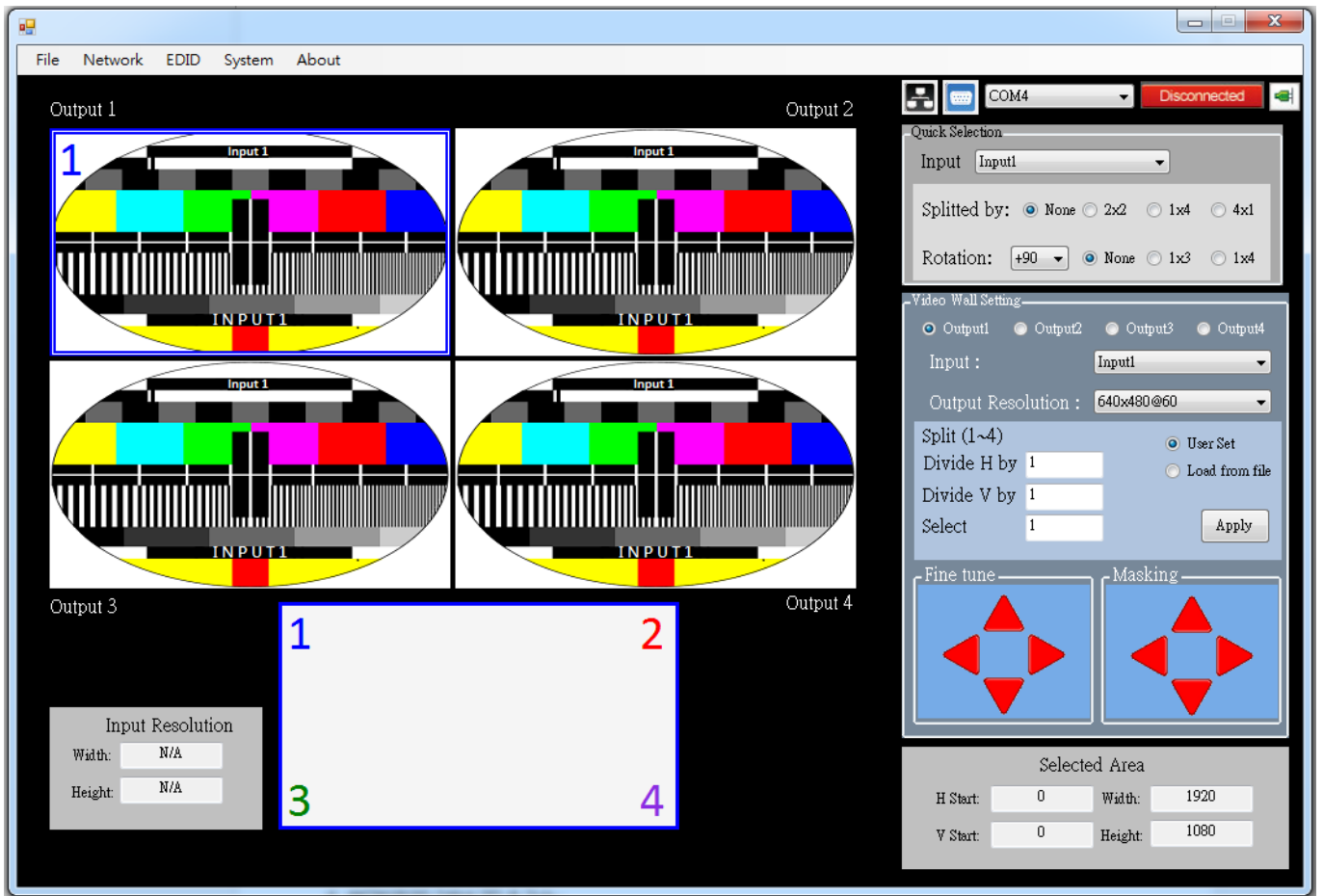
Method C: Software control through RS-232 port / Ethernet port

System Requirement and Precautions

1. Whenever power off AV-GM0833-S1, please stay unpowered at least 5 to 10 seconds to allow power capacitors to discharge.
2. The AV-GM0833-S1 provides software control program which runs under Microsoft Windows 98, 2000, XP, 7 through the interface of RS-232 serial control.
3. Before you click on the icon of the software, make sure you have secured the connection between your computer COM port and the AV-GM0833-S1.

Start the software control program

When clicking on the executable file, the following dialog will pop-up. It has two ways to control the AV-GM0833-S1 device (under Microsoft Windows 7, please run as administrator).



Step 1: Select RS-232 or Ethernet connection.



Step 2: Select COM port connection.



System:



Quick Selection: Get a quick setting from default

(a) Select the type of Rotation if requires (Default is none)

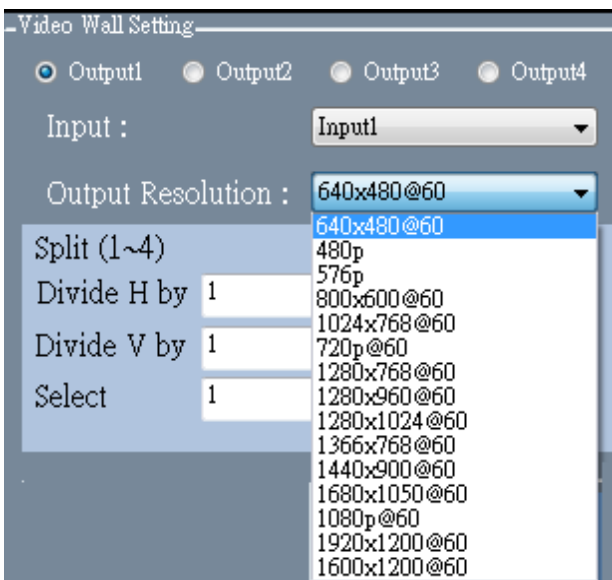
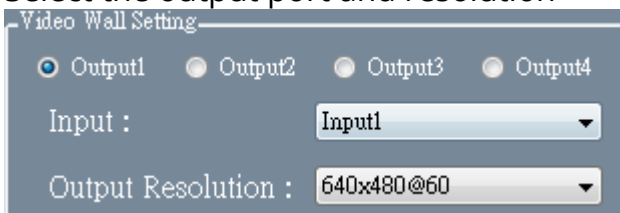
- 1x3: This mode will split the screen into 3 parts and rotate the figure.
- 1x4: The mode will split the screen into 4 parts and rotate the figure.

*Notice that the Rotation and the split configuration cannot do simultaneously.



Video Wall setting

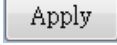
(a) Select the output port and resolution

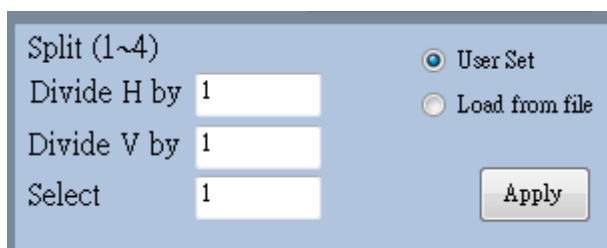


(b) Select the part you want to show on display

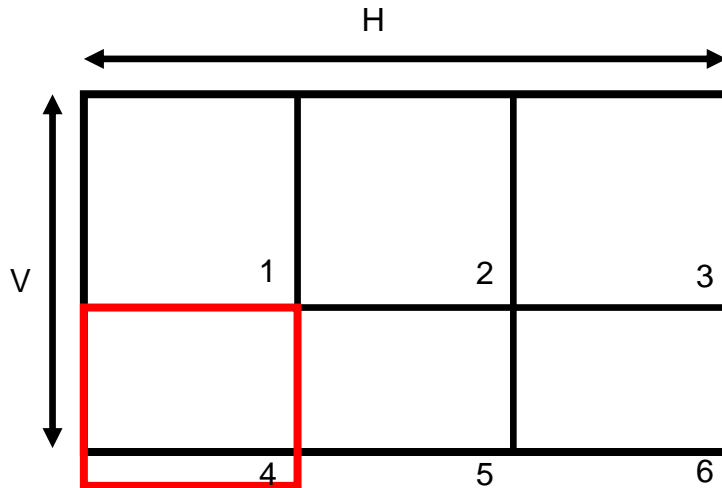
➤ User Set:

User can define how many cut in both direction (enter 1~4) and the part want to show on display.

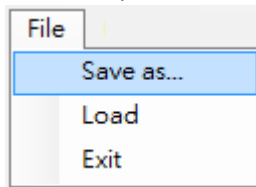
Read the configuration of User Set, please click the  button.



For example: where is 4th cut in a 3x2 layout?

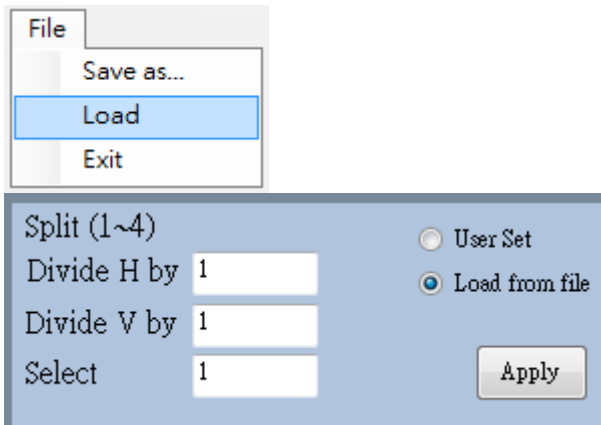


Besides, user can save the figuration into the device for future using.



➤ Load from file:

User can load the configuration from the existing file. Next, select the "Load from file" mode and click the button to load.



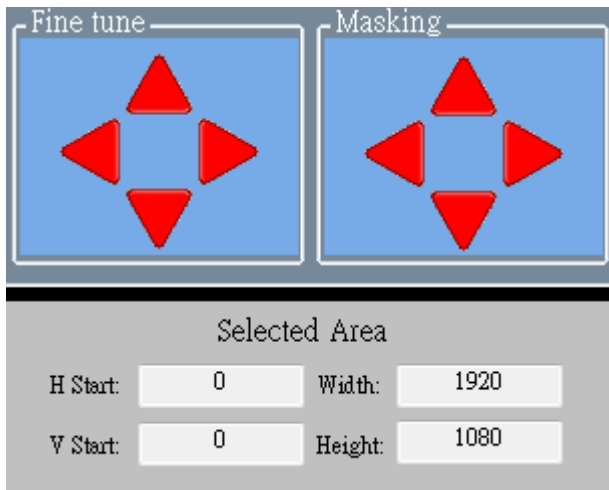
Adjust the image on the display

(a) Fine tune:

You can arbitrary move the image on each screen in four directions through the button, every move is one pixel per row or column.

(b) Masking:

You can block a pixel per row or column from the edge in four directions through the button, and the image will be auto-scaling to fulfill the screen.



Monitor the effect on the display

This area will demonstrate the resulting selection of the input video to be display for the selected output channel. The bottom part of this area, user can check each portion from the original input that response to each display.

Output 1
Output 2

Output 3
Output 4

1	
	2
	3
	4

Input Resolution	
Width:	1280
Heigh.:	720

COM1
Connected

Quick Selection

Splitted by: 1x1 2x2 1x4 4x1

Rotation: None 1x3 1x4

Video Wall Setting

Output1 Output2 Output3 Output4

Output Resolution:

Video Wall Group select

Group 1

Split (1~4):

Divid H by User Set Load from file

Divid V by

Select

Fine tune


Masking

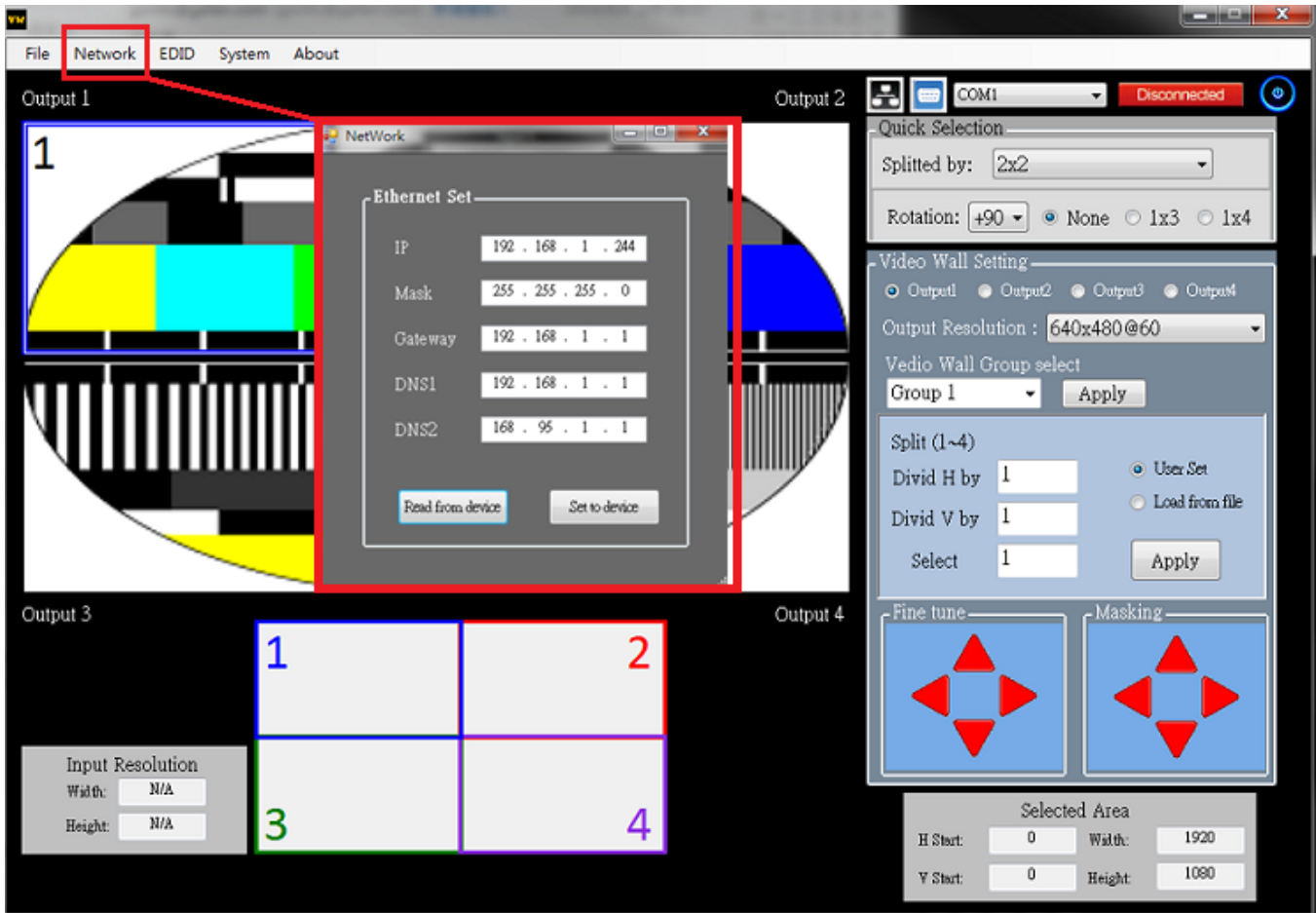
Selected Area

H Start	960	Width	320
V Start	810	Height	270

Network

User also can use the Ethernet to control software program. First, user should click the "Network" option to open the Ethernet Set. Next, user can read the Ethernet setting from device or manually set to device.

After the step of Ethernet Set, user can select the  button and key in the device IP address. Then, they can connect the software program by Ethernet.



EDID Management

(a) Learn EDID from Default

- Select default EDID mode.
- Select input.
- Click "Learn" button to learn default EDID.

(b) Learn EDID from Display

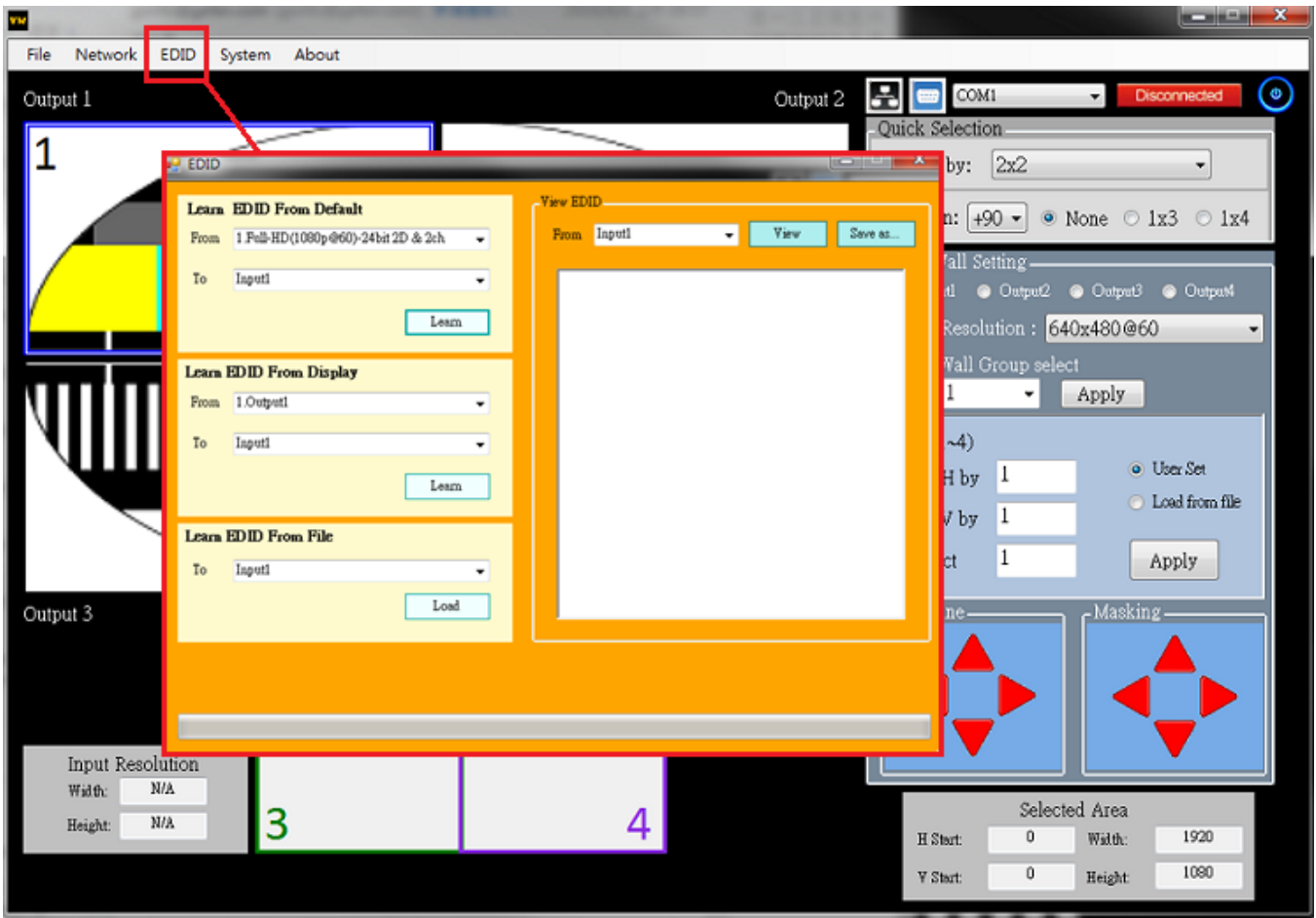
- Select the output EDID mode.
- Select input.
- Click "Learn" button to learn EDID from display.

(c) Learn EDID from File

- Select input
- Click "Load" button to select the EDID file and write it into input.

(d) View EDID content

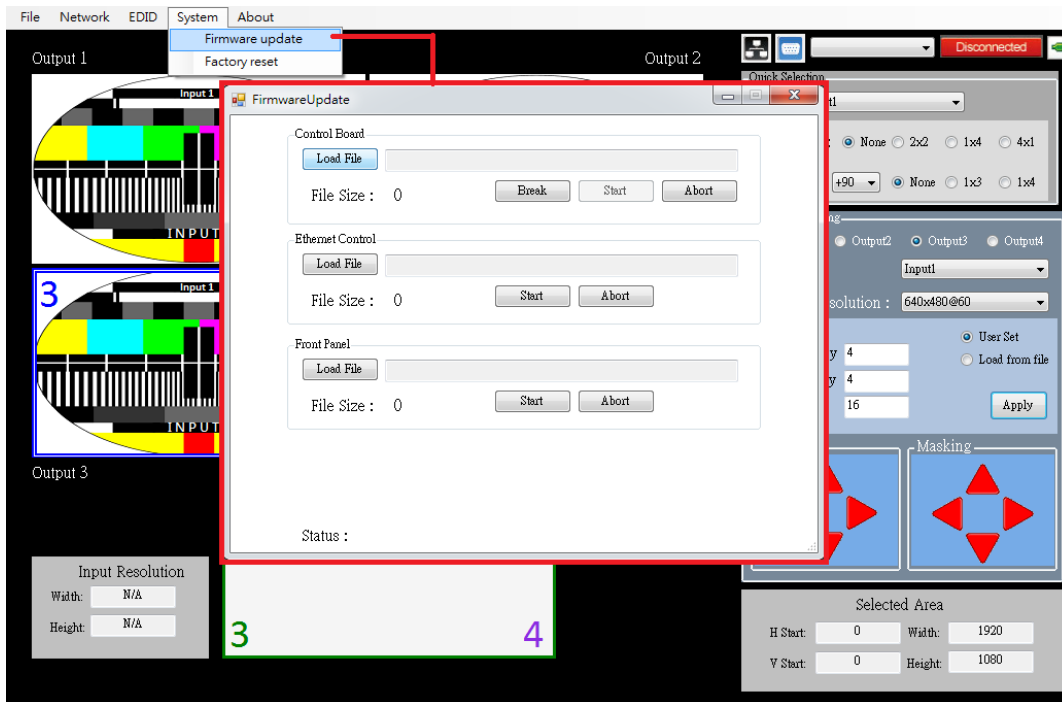
- Select the EDID input source (Input, Output or From File)
- Click "View" button to read the EDID description and analysis.
- Click "Save as..." to save the EDID as a file on computer.



System

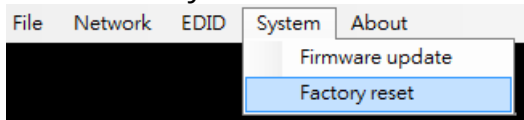
(a) Firmware Update

Before firmware update step. Please make sure your RS-232 is connecting and the connecting state is "Connected". User can load the firmware file which they want to update. Click "Start" button and the firmware will start to update.



(b) Factory Reset

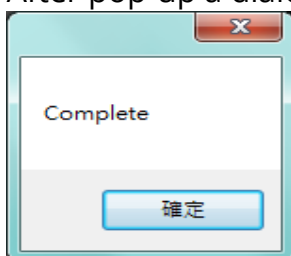
- Click "Factory reset" button to do factory default reset.



- This default reset process will take about 10 seconds.

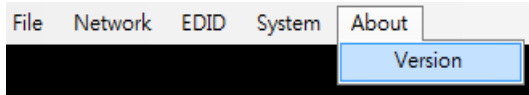


- After pop-up a dialog indicates complete, please restart this machine.



About

Read the software and firmware version/



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 sources and displays may have various level of capability in playing audio and video, the general principle is that the source will output the lowest standards in terms of 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 is **a method** to do EDID Learning as below:

Software Control: Please refer to the **Operation Approach\ Software Control through RS-232 port (Page 15.)**

There are **six embedded default EDIDs** as below,

1. Full-HD(1080p@60)-24bit 2D & 2ch
2. Full-HD(1080p@60)-24bit 2D & 7.1ch
3. HD(1080i@60) (720p@60)-24bit 2D & 2ch
4. HD(1080i@60) (720p@60)-24bit 2D & 7.1ch
5. Full-HD(1080p@60)-30bit 2D & 2ch
6. Full-HD(1080p@60)-30bit 2D & 7.1ch

WARRANTY

The SELLER warrants the **AV-GM0833-S1 4x4 HDMI™ Scaler Matrix with video wall function** 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-GM0833-S1 features and specifications is subject to change without further notice.**

Support

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