



12-Display / 9-Display 4K2K Video Wall Processor



P/N: AV-GM0A33-S1



Safety and Notice

The **AV-GM0A33-S1 12-Display / 9-Display 4K2K Video Wall Processor** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM0A33-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-GM0A33-S1 12-Display / 9-Display 4K2K Video Wall Processor** is a powerful, most cost effective, and fully real time data/video processor for multiple flat panel displays or projectors. AV-GM0A33-S1 can support up to 12 DVI/HDMI outputs to expand the spectrum of video wall applications. With add-on card design concept, users can therefore adjust the number of output ports based on different scenarios. Meanwhile, with the very same chassis of AV-GM0A33-S1, the bandwidth of the video, the controllability of the module, and the input complexity can be further explored to either cost down the project budget or enhance with the new features from the new I/O cards.

Thru digital transmission, the quality of the outcome videos is guaranteed. The output display is grained up to 255 by 255 squares. Virtually any setups for the display layout can be possible by the provided software. The AV-GM0A33-S1 allows you to input DVI/HDMI, VGA, Component, wherever positions and whatever sizes you want for viewing. The embedded scaler converts signals from two of input sources to match the native resolution of monitors, flat panel displays, projectors as well as user-selectable output settings up to WUXGA (1920x1200). The AV-GM0A33-S1 sends the resulting processed video thru DVI/HDMI interface to the connected monitors/projectors based on the display layout. The layout can be readily modified to fit your applications and optimize visual effects. Typical applications include digital signage, and broadcasting/education/ surveillance systems, etc.

FEATURES

- Up to 12 DVI outputs from 640x480 to 1920x1200 with a local loop out for monitoring
- Support input rotation
- PIP, side-by-side (PAP), full screen modes and adjustable size & position through software
- Resize, position, flip, zoom output video
- Each DVI output has an independent controllable display area
- User-selectable output settings, up to 1920x1200
- Image parameters and layouts are automatically saved in flash non-volatile 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 new features and technology enhancements
- Support one of HDMI input resolution up to 4K2K@30Hz, other inputs up to 1080p/WUXGA
- PCIe-interface add-on card design
- Supports DVI/HDMI, VGA and Component input format from 640x480 to 1920x1200, interfaced or progressive
- Perfectly as a video screen splitter, a video converter and a video switcher
- Can be cascaded to obtain more displays
- HDCP compliant
- Advanced video de-interlacer for improving 480i and 576i SD video input
- 2.5 RU size

PACKAGE CONTENTS

- 1x AV-GM0A33-S1 / AV-GM0A33-S1-9X
- 1x User Manual
- 1x Installation software CD
- 1x AC power cord
- 2x DVI to HDMI adapter
- 1x VGA to component breakout cable
- 1x Rack-mounting ear set
- 1x USB to RS-232 cable

There are two kinds of the unit (9 outputs and 12 outputs), if you buy AV-GM0A33-S1-9X, the output card module cage #4 (output 10~12) is optionally available.

SPECIFICATIONS

Model Name		AV-GM0A33-S1	AV-GM0A33-S1-9X
Technical			
Role of usage		Video Wall Processor	
Output displays		12 outputs	9 outputs (up to 12)
Number of module cage		4	3
Input Format Support		DVI/HDMI / VGA / Component	
Output support		DVI/HDMI	
HDCP compliance		Yes	
Video bandwidth		DVI [Single-link 4.95Gbps] HDMI [2.25G to 6.75Gbps] Component [30MHz] VGA [165MHz]	
Input video support		Up to 1920x1200@60 / 4K2K@30	
Audio Support		No	
Control		RS-232 / Ethernet	
Input TMDS signal		1.2 Volts [peak-to-peak]	
ESD protection		Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]	
Input		2x DVI/HDMI + 1x VGA + 1x Component +1x RS-232 + 1x RJ-45	
DVI connector		DVI-I [29-pin female, digital only]	
VGA connector		HD-15 [15-pin D-sub female]	
RS-232 connector		DE-9 [9-pin D-sub female]	
RJ45 connector		WE/SS 8P8C	
Mechanical			
Enclosure		Metal enclosure	
Dimensions (L x W x H)	Model	44 x 37.47 x 13.12 cm	
	Carton	57 x 47 x 26.5 cm	
Weight	Model	9.5 kg	9.16 kg
	Package	11 kg	10.66 kg
Fixedness		2.5RU rack-mount with ears	
Power supply		AC Power 100-240V	
Power Consumption		30 Watts [max]	
Operation temperature		0~40°C [32~104°F]	
Storage temperature		-20~60°C [-4~140°F]	
Relative humidity		20~90% RH [no condensation]	

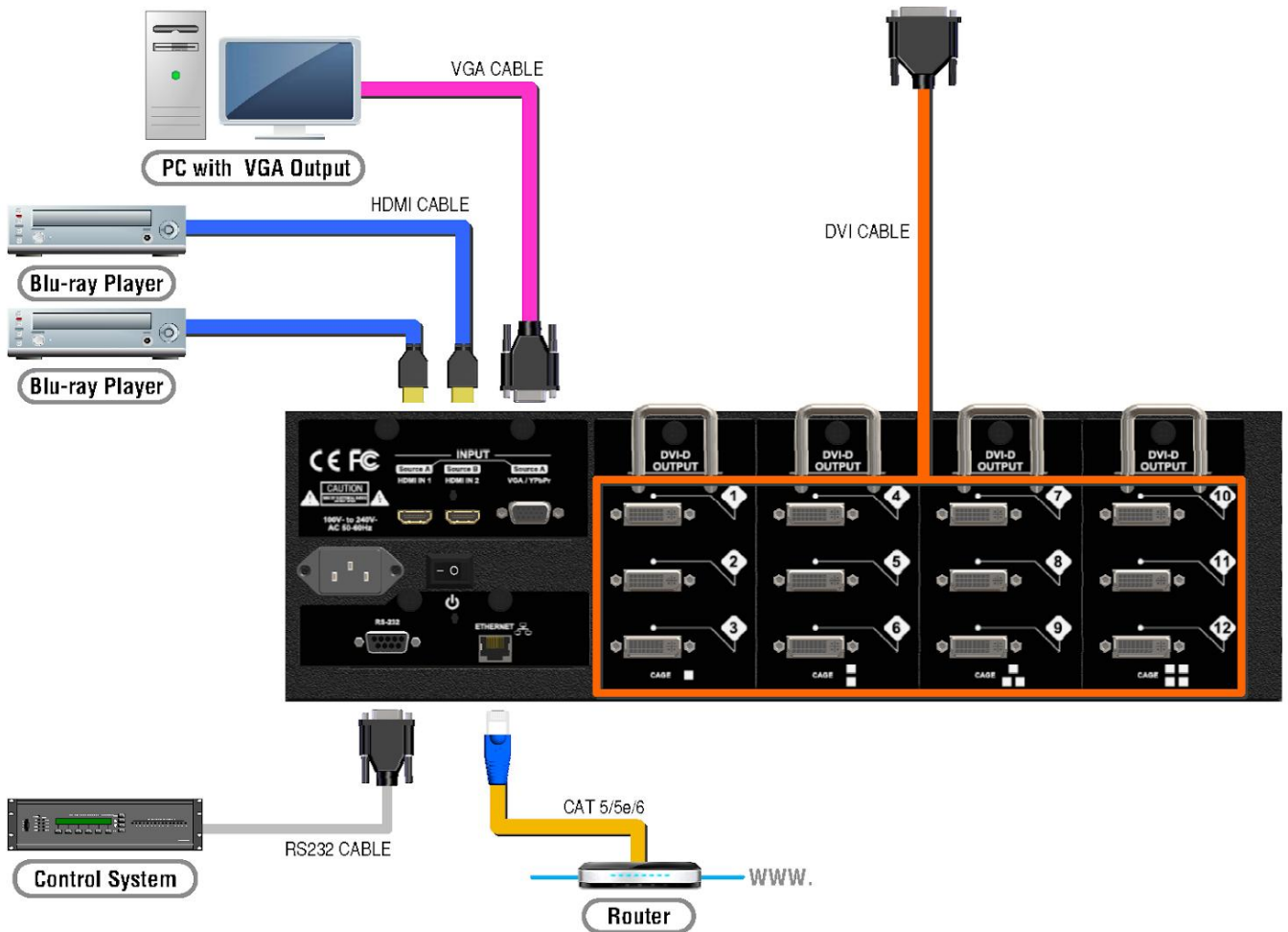
HARDWARE INSTALLATION

AV-GM0A33-S1 as master

1. Connect all sources to DVI/HDMI, VGA or Component Inputs on the AV-GM0A33-S1.
2. Connect all displays to DVI/HDMI Outputs on the AV-GM0A33-S1.
3. Connect the AC Power cord (100-240V) to the AV-GM0A33-S1.
4. Power up the AV-GM0A33-S1.
5. Switch on all devices connected and then control the display output through RS-232, Ethernet and software.

CONNECTION DIAGRAM

- DVI
- HDMI
- VGA
- CAT5/5e/6
- RS-232



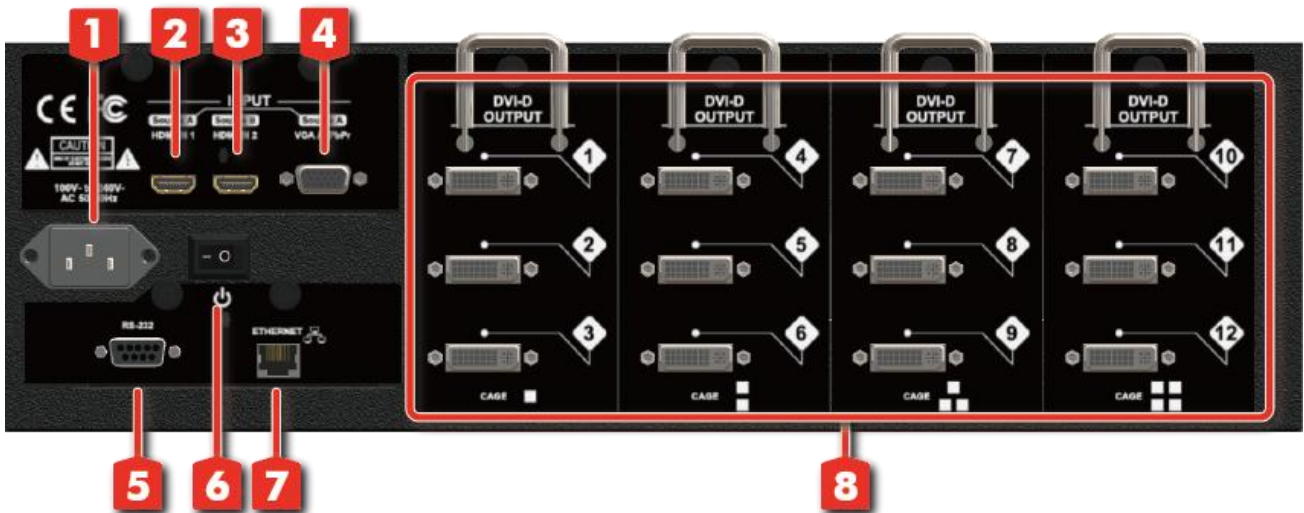
PANEL DESCRIPTIONS

AV-GM0A33-S1

Front Panel



Rear Panel



1. AC Power Supply
2. Input Port: DVI/HDMI input
3. Input Port: DVI/HDMI input, supports input resolution up to 4K2K@30
4. Input Port: VGA/Component input
5. RS-232 control: RS-232 control port
6. Power Switch: Power ON/OFF switch
7. Ethernet control: Ethernet control port
8. Output Port 1-12: DVI/HDMI outputs

The output card module cage #4 (output 10~12) is optionally available

SUPPORTED RESOLUTION

Input resolution supported

HDMI 1	HDMI 2	VGA	Component (YPbPr)
640x480	640x480	800x600 @60Hz	EIA 720x480p @59.95(60)Hz
720x480	720x480	1024x768 @60Hz	EIA 720x576p @50Hz
720x576	720x576	1280x720 @60Hz	EIA 1280x720p @59.94(60)Hz
800x600	800x600	1280x768 @60Hz	EIA 1920x1080i @59.94(60)Hz
1024x768	1024x768	1280x960 @60Hz	EIA 1920x1080p @59.94(60)Hz
1152x864	1152x864	1280x1024 @60Hz	
1280x720	1280x720	1360x768 @60Hz	
1280x768	1280x768	1400x1080 @60Hz	
1280x800	1280x800	1600x1200 @60Hz	
1280x960	1280x960	1920x1080 @60Hz	
1280x1024	1280x1024		
1360x768	1360x768		
1366x768	1366x768		
1400x1050	1400x1050		
1440x240	1440x240		
1440x288(576i)	1440x288(576i)		
1440x900	1440x900		
1600x900	1600x900		
1600x1200	1600x1200		
1680x1050	1680x1050		
1920x540(1080i)	1920x540(1080i)		
1920x1080	1920x1080		
1920x1200	1920x1200		
	4K2K@30Hz		

Output resolution supported

800x600@60

1024x768@60
1280x720@60
1280x1024@60
1366x768@60
1440x900@60
1440x1050@60
1600x1200@60
1920x1080@60
1920x1200@60


Software Operation

System Requirements and Precautions

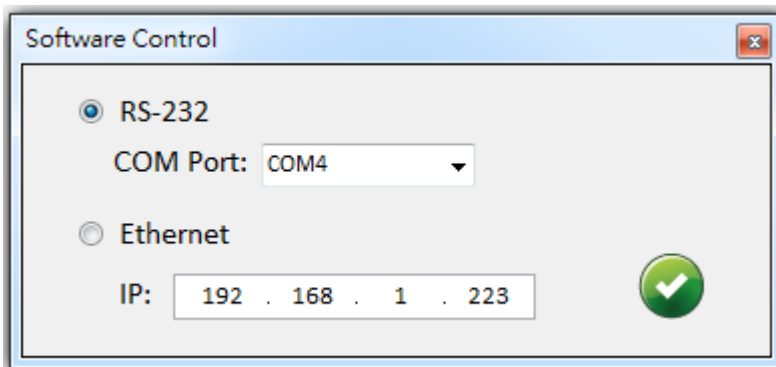
1. Whenever power off AV-GM0A33-S1, please stay unpowered at least 5 to 10 seconds to allow power capacitors to discharge.
2. The AV-GM0A33-S1 provides software control program which runs under Microsoft Windows 98, 2000, XP, 7, 8 through the interface of RS-232 serial control.
3. Before you click on the icon of the software, make sure you have secured the connection between your computer COM port and the AV-GM0A33-S1.

Start the Software Control Program

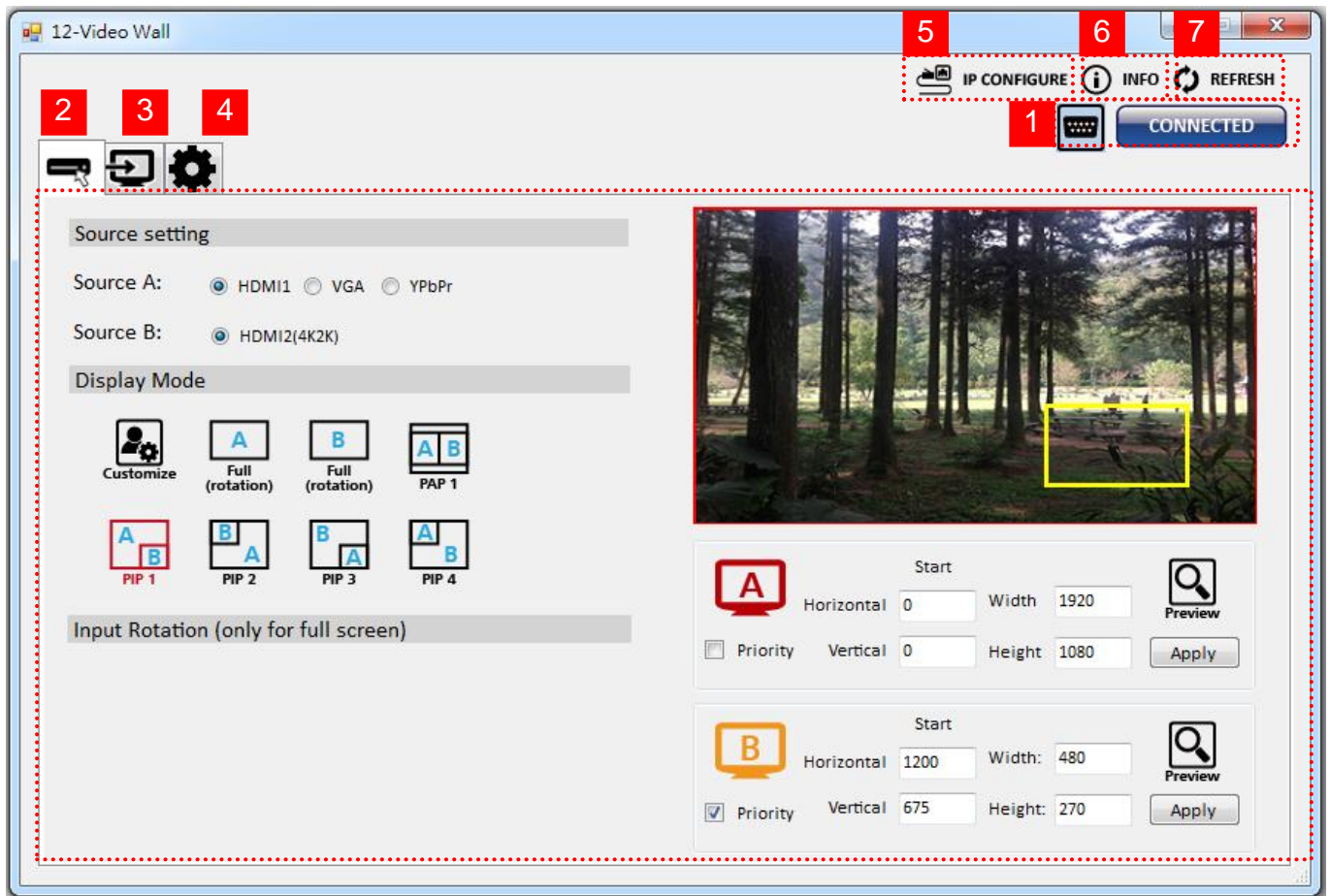
When clicking on the executable file, the following dialog will pop-up. There are two ways to control the AV-GM0A33-S1 device (under Microsoft Windows 7, please run as administrator).

RS-232 serial Mode: Use RS-232 to connect the port on device and computer. Select correct COM port and click the  button.

Ethernet Mode: Enter the device IP address and click the  button.





After the software control setting is accomplished, it will enter the control interface directly.



Control Interface

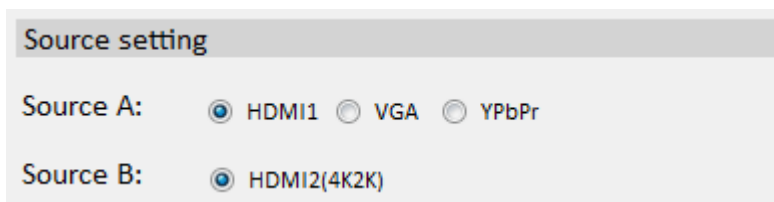
1. Connection Status:

Show the connect information and status. If you use RS-232 serial control Mode to connect device, the graph is . In contrast, the graph of Ethernet is .

2. Input Control:

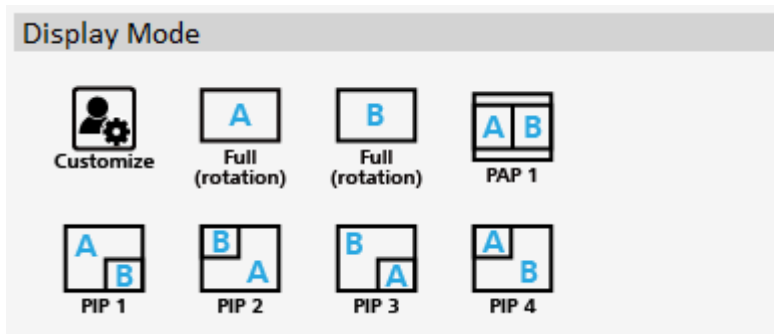
In this part, you can set up the input source, source display mode and screen rotation.

(1) Source setting

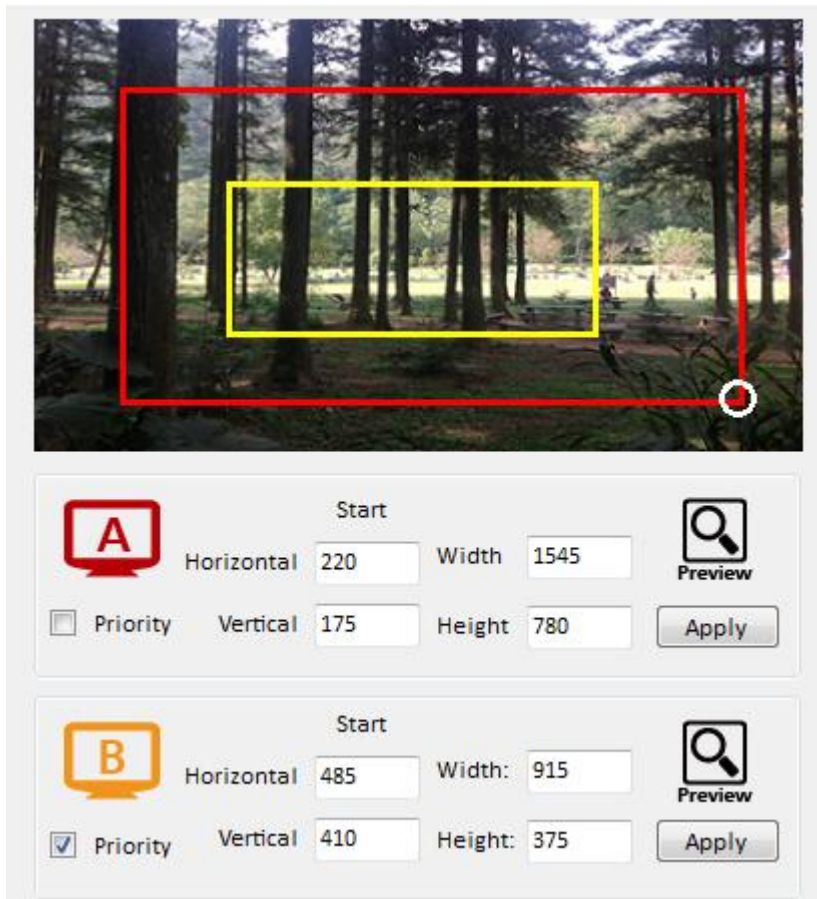


Set the Input source. You can select at most two input source.

(2) Display mode



In here, we provide 7 default mode and one customize mode for you to select.



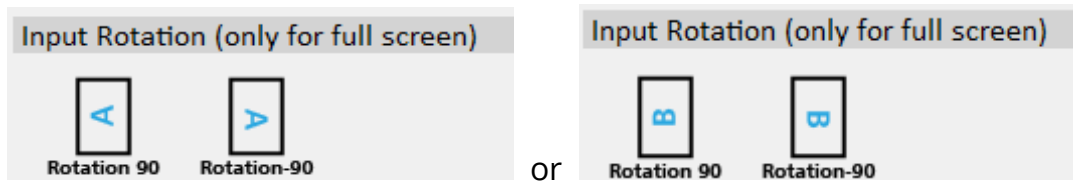
In the right part of control interface, users can customize the display mode thru controls.

The different colors of frame represents the different input sources. The information of coordinate shows the position of input source screen. In different color frame, it will show a white circle in the right corner. User can slide the white circle to resize the input source screen or adjust the position by setting coordinate. Besides, user can also click the Priority button to make the window precedence.

(3) Input Rotation

Please take a closer look at this function. This function is only for full screen mode to use.

When selecting the full screen mode, the following window will pop-up. It has two directions to rotate the input screen.



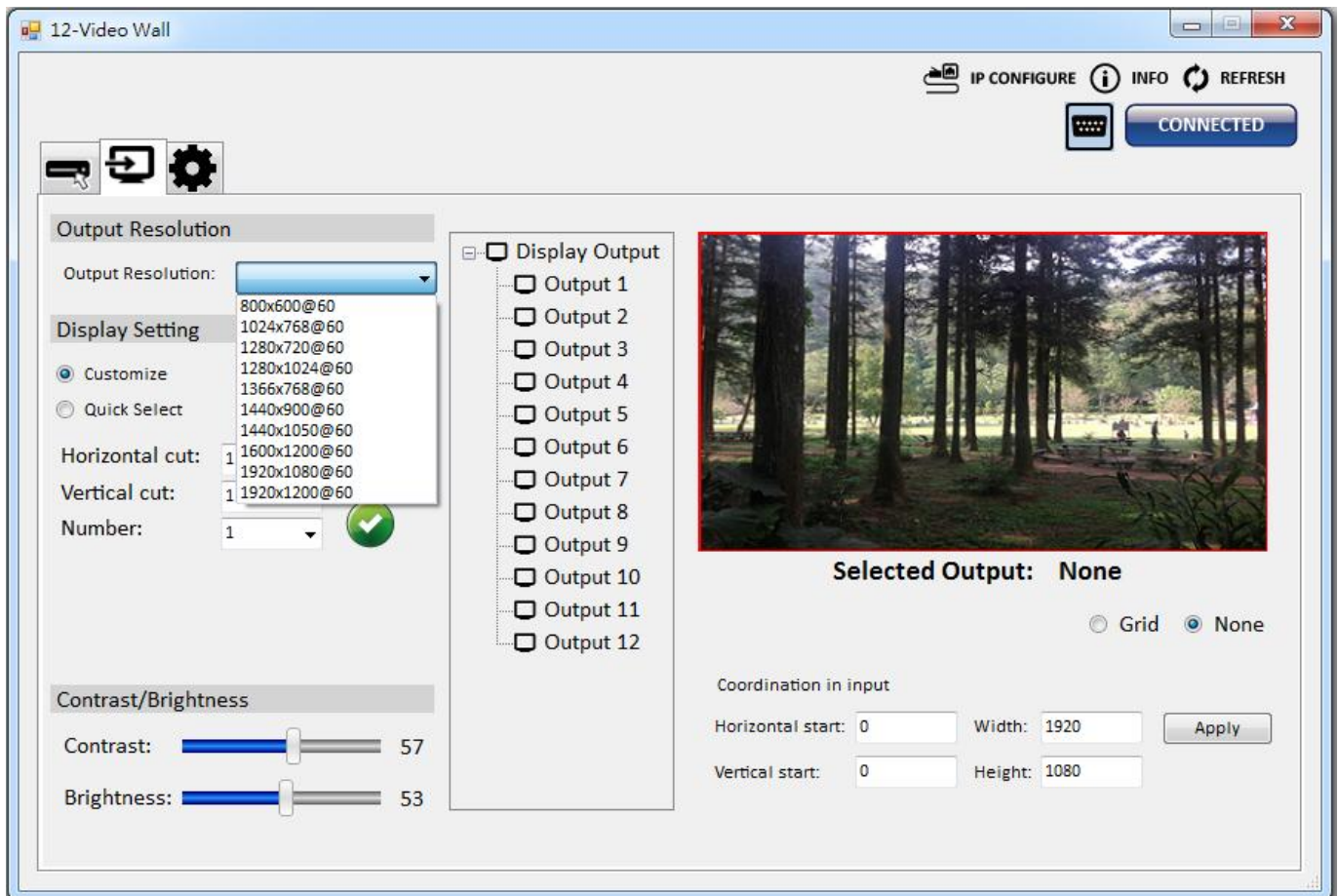
3. Output control

In this part, user can set up the output resolution, display setting and the output's brightness and contrast.

(1) Output Resolution

Set the output resolution. User can choose the desired display icon to select the output port* and setup resolution. When setting the different resolution, the coordinate of output will also be changed.

* If you buy AV-GM0A33-S1-9X, the display output port will only show output 1~9.



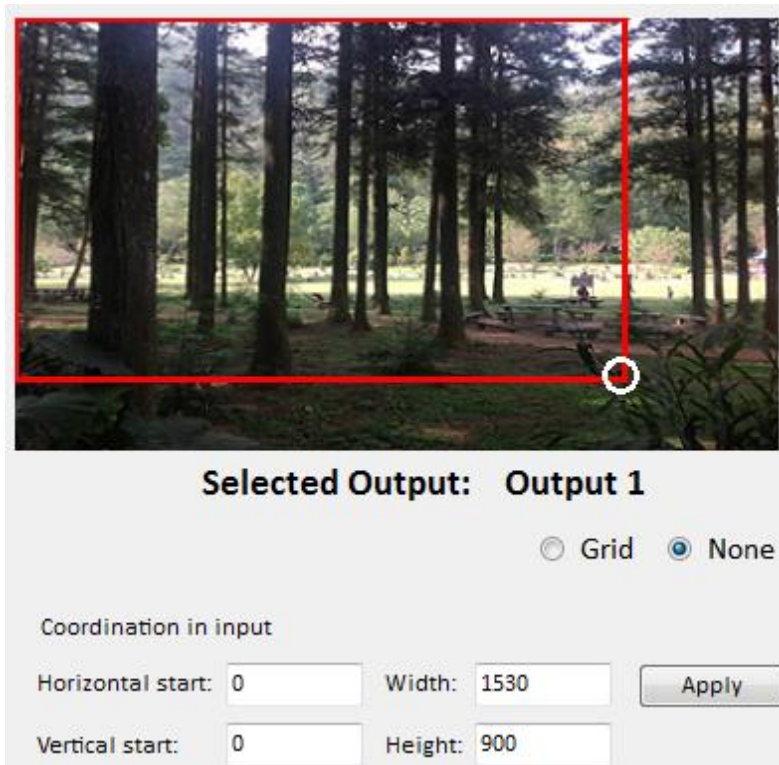
(2) Display setting

There are two modes.

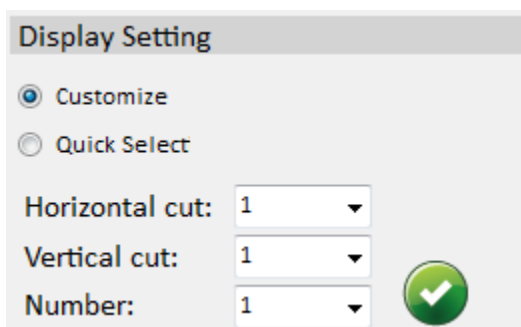
➤ Custom

In Custom define mode, user can slide the white circle to adjust the size of the output screen or enter the number to adjust the coordinate. In addition, if user wants to understand or estimate which part you may select, it also can select the Grid button to show grid on the graph. After the setting, please click the

button.



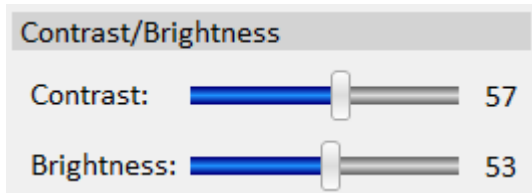
➤ Quick Select



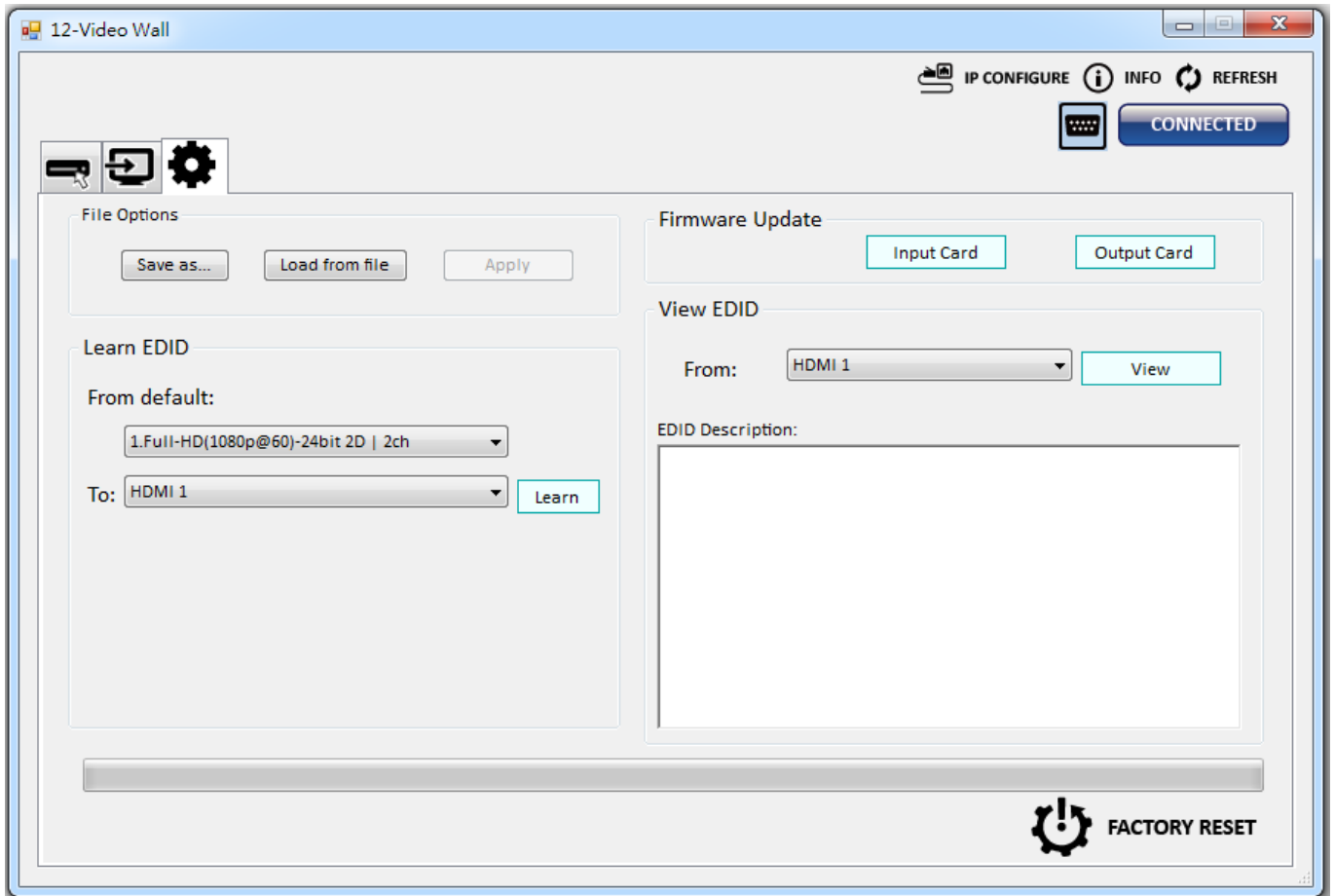
In Quick Select mode, user can define how to cut in both directions and the part you desired to show on output TV.

(3) Contrast/Brightness

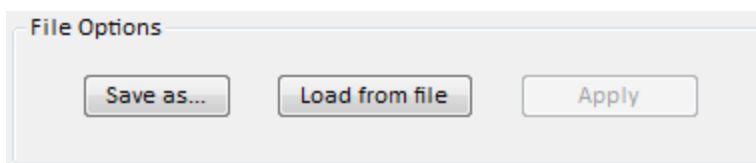
In here, user can adjust the brightness and contrast of output.



4. Advanced setting



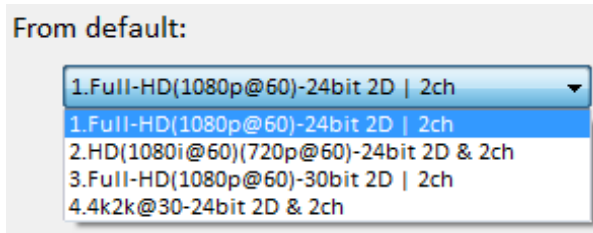
(1) File Options



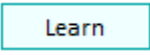
User can click the **Save as...** button to save all the configuration for future use. You can also click the **Load from file** button to load and read back the configuration from the existing file.

(2) Learn EDID


- Select Default EDID (1-4 default EDID).



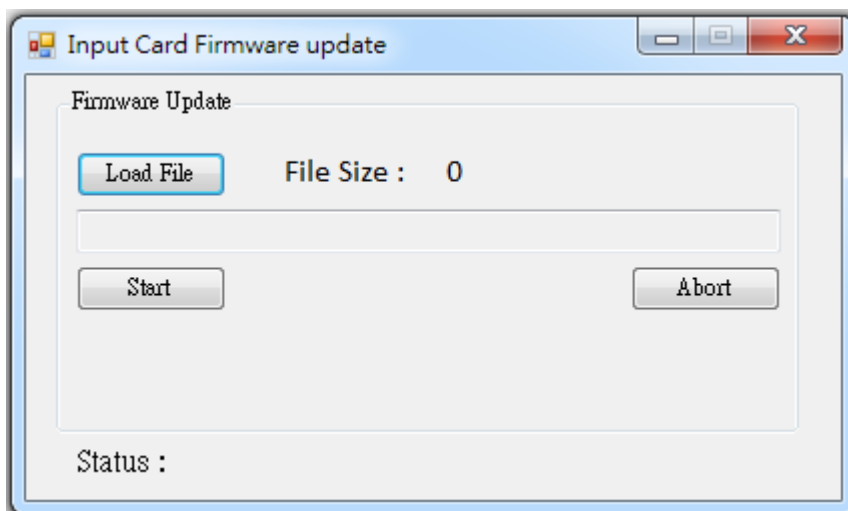
(The default EDID of 4K2K only suit for HDMI 2)


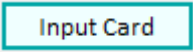
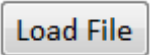

- Select Input.
- Click  button to learn EDID.

(3) View EDID content

- Select the EDID input source (HDMI 1, HDMI 2).
- Click  button to read the EDID description and analysis.

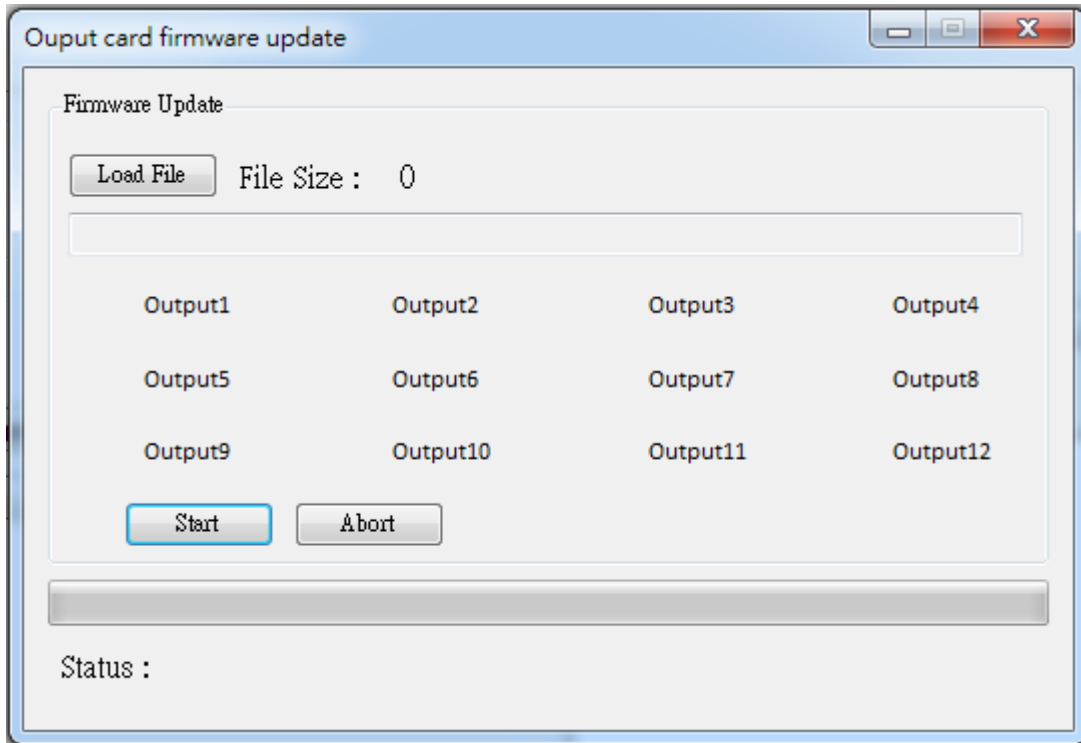
(4) Input Card firmware update



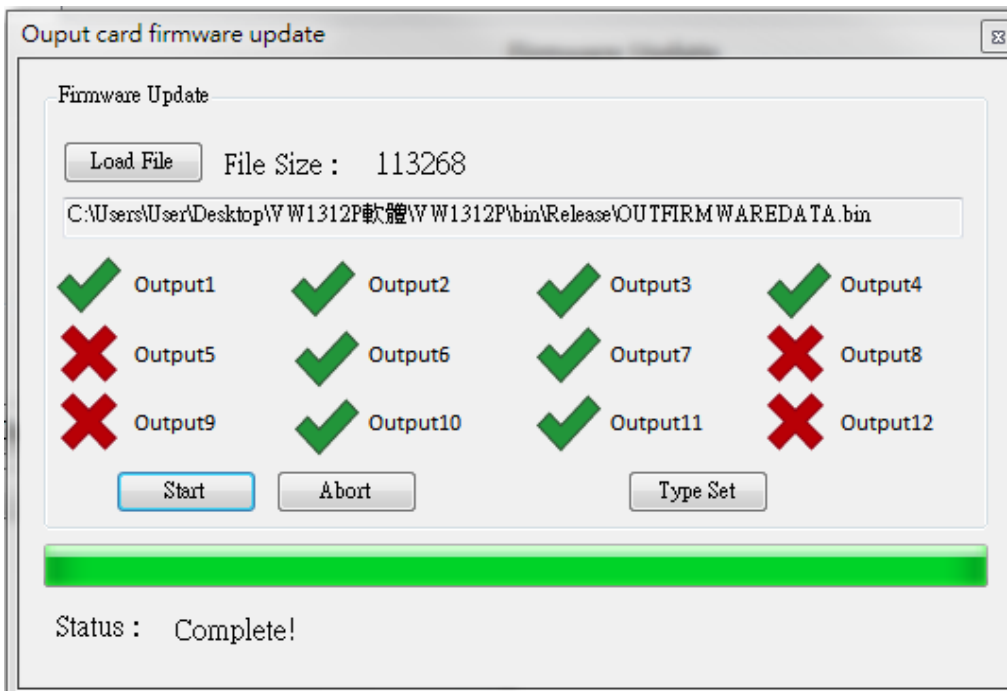
- Make sure your RS-232 is connected and the connection status is .
- Click the  button to enter the interface.
- Click  button to select the firmware file which you want to update.
- Click  button and the firmware will start to update.

(5) Output Card firmware update*


* If you buy AV-GM0A33-S1-9X, the output card will only show output 1~9.



- Make sure your RS-232 is connected and the connection status is **CONNECTED**
- Click the **Output Card** button to enter the interface.
- Click **Load File** button to select the firmware file which you want to update.
- Click **Start** button and the firmware will start to update.
- After firmware update, it will display the status of each output card.

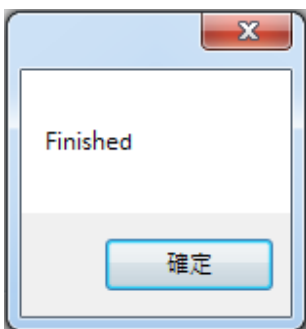


(6) Factory Reset


- Click  **FACTORY RESET** button to do factory default reset.
- This default reset process will take about 10 seconds.



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



5. IP Configure

You can also use the Ethernet to control software program. First, you should click the  **IP CONFIGURE** button to setup network set. Next, you can read the Ethernet setting from device or manually set to device. After the step of IP configuration, please restart the machine.

NetWork ⊗

NetWork

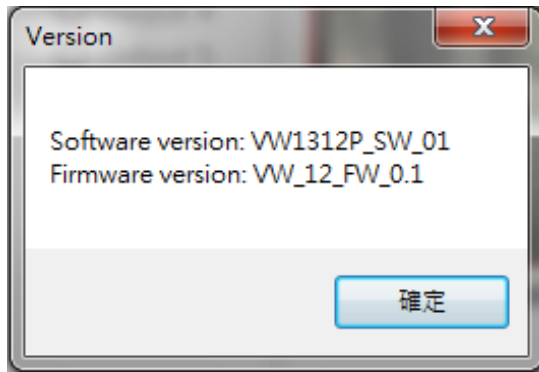
IP

Mask


Gateway

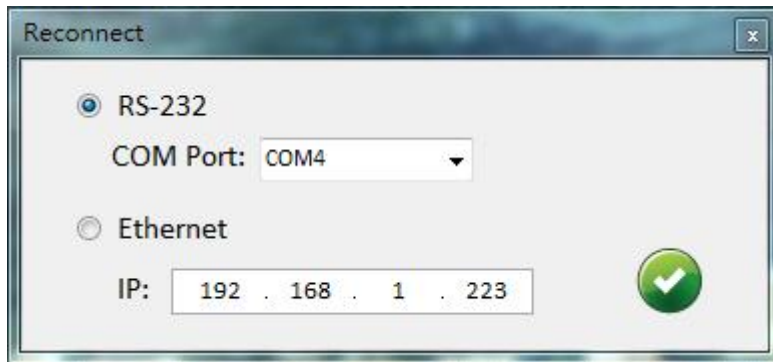
6. Info

Read the software and firmware version.



7. Refresh

This function can not only refresh the information of setting but also reconnect this device. You can click  **REFRESH** button to update the control connection. After you click this button, pop-up a "Reconnect" window, shows you can select the approach to connect this device.



EDID LEARNING

The EDID learning function is only necessary whenever you encounter any display on the HDMI output port that cannot play video properly. Because the HDMI sources and displays may have various level of capability in playing video, the general principle is that the source will output the lowest standards in terms of video resolutions to be commonly acceptable among all HDMI displays. In this case, a 720p 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 Operation (Page 13.)**

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

1. Full-HD(1080p@60)-24bit 2D | 2ch
2. Full-HD(1080i@60)(720p@60)-24bit 2D & 2ch
3. Full-HD(1080p@60)-30bit 2D | 2ch
4. 4K2K@30-24bit 2D & 2ch

WARRANTY

The SELLER warrants the **AV-GM0A33-S1 12-Display / 9-Display 4K2K Video Wall Processor** 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-GM0A33-S1 features and specifications is subject to change without further notice.**

Support

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