

Dual-View Video Processor



P/N: AV-GM0903-S1



The **AV-GM0903-S1 Dual-View Video 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-GM0903-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-GM0903-S1 Dual-View Video Processor** provides the most flexible and cost effective solution in the market to route high definition video source from any of the two HDMI sources to the remote display 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

- 2 x Dual DVI inputs and 2 x Dual DVI outputs
- Input resolutions support from 640x480 to 1920x1200, interlaced or progressive
- Output resolutions support from 640x480 to 1920x1200, progressive
- Adjustable size & position through software
- The layouts are individual on the different output
- Firmware upgradable for support of new features and technology enhancements.
- Titles, borders and colored backgrounds
- Resize, position, zoom& pan and blend output video
- Perfectly as a video screen splitter, a video converter and a video switcher
- Software control through RS-232 and Ethernet
- Each dual output has an independently controllable area.
- Supports input rotation.
- 1U size

PACKAGE CONTENTS

- 1x AV-GM0903-S1
- 1x DC 12V 5A
- 1x Installation software CD
- 1x User Manual
- 1x IR Remote control (28 keys)

SPECIFICATIONS

Model Name		AV-GM0903-S1				
Technical						
Role of usage	e	Multiplexer / video processor				
Background video input		No				
HDCP compl	iance	HDCP 1.1				
Video bandw	vidth	DVI [Single-link 4.95Gbps] HDMI [2.25G to 6.75Gbps]				
Video suppo	rt	480i / 480p / 720p / 1080i / 1080p60 /1920x1200@60 / 1600x1200@60				
Video Forma	t Support	DVI/HDMI				
Audio suppo	rt	No				
Control		RS-232/ IP Control				
Embedded video mixer		Yes				
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 + 2xRS-232 + 1x RJ-45(Ethernet)				
Output		2x DVI				
DVI connecto	or	DVI-D [female, 29-pin]				
RS-232 conn	ector	DE-9 [9-pin D-sub female]				
RJ-45 connec	tor	WE/SS 8P8C				
Mecha	nical					
Hous	ing	Metal enclosure				
	Model	290 x 211 x 43mm [11.4"x8.3"x1.7"]				
Dimensions (L x W x H)	Package	325 x 196 x 92mm [12.7"x7.7"x3.6"]				
. ,	Carton	490 x 426 x 352mm [1'6"x1'4"x1'2"]				
Woight	Model	2.9kg [6.4 lbs]				
Weight	Package	5kg [11.1 lbs]				
Fixedr	ness	1RU rack-mount with ears				

Power supply	12V 5A DC
Power Consumption	5.75 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]

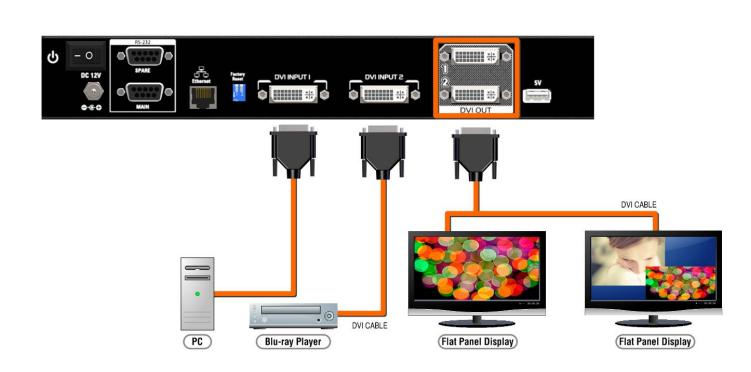
HARDWARE INSTALLATION

AV-GM0903-S1 as master

🔶 DVI

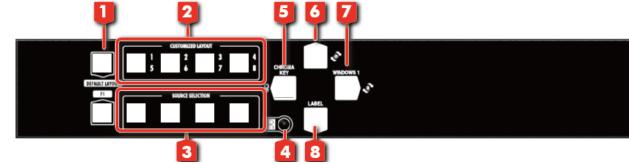
- 1. Connect all sources to DVI/HDMI Inputs on the AV-GM0903-S1.
- 2. Connect all display to DVI/HDMI Outputs on the AV-GM0903-S1.
- 3. Connect the +12V 5A DC power supply to the AV-GM0903-S1.

CONNECTION DIAGRAM



PANEL DESCRIPTIONS

Front Panel



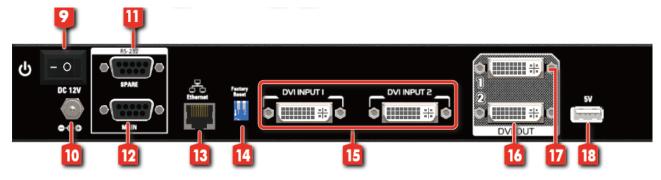
- **1. Default Layout PAP:** Default layout horizontal PAP/ vertical PAP Horizontal PAP: The light of button 6 is off. Vertical PAP: The light of button 6 is always shine.
- 2. Custom Layout 1-8

Custom layout 1-4: The light of button 6 is off.

Custom layout 5-8: The light of button 6 is always shine.

- **3. Source Selection Button:** window in full screen or source selection window Window in full screen mode: The light of button 6 is off. Source selection: The light of button 6 is always shine.
- 4. IR Sensor: IR sensor for receiving the IR commands from IR remote
- 5. Chroma key: Chroma key function on/off
- 6. Function Selection
- 7. Rotation: Rotate function on/off
- 8. OSD: All Windows OSD on/off

Rear Panel

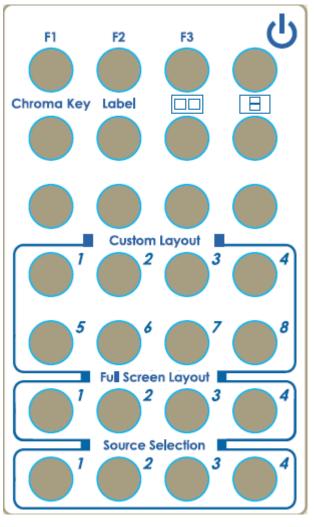


- 9. Power Switch: Power on/off
- 10. +12V DC: 12V DC power jack
- 11. RS-232: RS-232 control port
- 12. RS-232: RS-232 control port for F/W update
- 13. Ethernet: Ethernet control port
- **14. Dip Switch:** Switch factory reset mode [ON↓]

- 15. Input 1-2: DVI inputs
- 16. Output: DVI output 2
- 17. Output: DVI output 1
- 18. USB 5V

OPERATION APPROACH

Method A: IR Remote Control



Button	Function
F1	Reserved
F2	Reserved
F3	Reserved
ل	Power on/off the device
Chroma key	Chroma key function on/off
Label	Window label on/off
	Default layout 1
	Default layout 2
Custom layout 1	Custom layout 1
Custom layout 2	Custom layout 2
Custom layout 3	Custom layout 3
Custom layout 4	Custom layout 4
Custom layout 5	Custom layout 5
Custom layout 6	Custom layout 6
Custom layout 7	Custom layout 7
Custom layout 8	Custom layout 8
Full screen layout 1	Window 1 in full screen
Full screen layout 2	Window 2 in full screen
Full screen layout 3	Window 3 in full screen
Full screen layout 4	Window 4 in full screen
Source selection 1	Window 1 source selection
Source selection 2	Window 2 source selection
Source selection 3	Window 3 source selection
Source selection 4	Window 4 source selection

Method B: Software Control through RS-232 port / Ethernet port

System Requirement and Precautions

- 1. Whenever power off AV-GM0903-S1, please stay unpowered at least 5 to 10 seconds to allow power capacitors to discharge.
- 2. The AV-GM0903-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-GM0903-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-GM0903-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 connect button.

TCP/IP Mode: Enter the device IP address and click the connect button.

Please set port se he "Connect" B	election connectly, and push utton.
Port Selection:	R\$232 •
Serial COM Po	rt
Serial COM Po Port Number:	rt COM5
	COM5 -

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

Control Interface

2 1				
Dutput 1: 100	🕶 % 🔣 BKG Picture:	- 🕒 P 1 2	Output Resolutio	
	1	<u> </u>	1280 x 720	
		Ξ	으 🏭 🔒	
			8 5 6	n 711 811 芹
			O Window 1	-
			🔍 Window 2	- 5
			O Window 3	
		-	O Window 4	-
			******	******
Output 2: 100	▼ % 🕅 BKG Picture:	- 루 🕒 P 3 4	Image Visible:	Visible
	3 HStart: 128	<u> </u>	H Start:	
	3 HStart: 128 VStart: 5 Width: 221 Height: 82	=	V Start:	
	neigili. 62		Width:	200
			Height:	200
				Apply
			Window OSD:	🔄 Enable
			Border:	🔲 Visible
			Blinking (Tally):	On Off
		• • • • • • • • • • • • • • • • • • • •	Border Color:	

1. PAP Panel

Display and adjust the window size, position.

In this part, it has the different control tool for PAP panel setting.

- Output 1: 100 % Control percent: 10~100% to set the PAP Panel display/control size.
- Stretch: Fix the size ratio when the window is resizing.
- BKG Picture: Background picture: To set up the background picture of window.
- Window priority
 PAP mode
 Window 1 in full screen
- Window 2 in full screen

In addition, you can change the output layout by clicking the mouse left button. It has four different layouts (Dual Horizontal Output, Dual Vertical Output, Single Output 1, and Single

Output 2).

2. Tool Bar list:

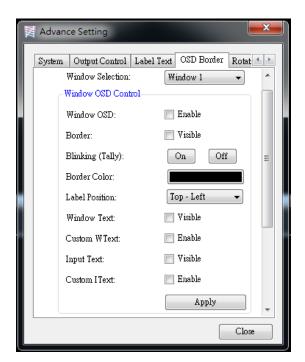
(1)



- Status: Get all information of the device and update this software state.
- (2) Port Setting: Pop-up the "Port Setting" dialog, user can change the connecting way.

(3) Advance Setting: In this function, user can set the no signal color, fade in/out effect, output control, background picture, window text, input text, OSD border, rotation, EDID and factory reset.

Advance Setting	Advance Setting
Advance Setting	Advance Setting
All Windows OSD Control Windows OSD Enable: On Off Borders Blinking: On Off	Input 1: Input 2: Apply Close



Output Control Setting:

In this function, user can determine to turn on or off the HDMI mode and audio, and also can select the configuration of background picture.

🔀 Advar	nce Setting				×
System	Output Control	Label Tex	t OSD Border	Rotat 4	•
	Output Selection:		Dutput 1	•	
l r	Output Control				
	HDMI Mode:		HDMI Enable	•	
	Audio Mute:		Mute		
	Audio Selection:	[input 1	-	
			Apply		Ξ
	Background Picture	Control			
	Picture Enable:	[Enable		
	Picture Selection:		Picture 1	•	
	Horizential Position	. [Left	•	
	Vertical Position:		Гор	•	
		ſ	Apply		-
				Close	

Rotation:

For Rotation function, only window 1 can be applied.

Output Control Label Text O	SD Border Rotation EDII	
Rotation Function:	Enable	
Rotary Window:	Window 1 👻	
Rotary Type:	+90 💌	
Assistant Window:	Window 1 👻	
Horizontal Shrink:	Enable	
Horizontal Multiple:	1x -	
Vertical Shrink:	Enable	
Vertical Multiple:	1x -	
	Apply	
	Close	

► EDID:

User can learn EDID from default or display. In addition, it also provides advance EDID function for user to edit, save and read.

Label I		ing							×									
	EDID Ini	D Bord it t Port:	_	otation l Input		D F	actory l ▼	Res										
	EDID Le																	
		ut Port	_	utput 1			•											
	-	t Port:		l Input			• •											
				F	Le	aming												
	Advance	Setting	c —															
	It is : inclu etc.	advanc Isive of	e EDIE Editor) functi , Savin	ons tha g, Read	t are ling and vance	a											
								Close										
🗧 EDID 🔇	Control																X	
	Control	File froi	m comj	outer.					C)pen		Save		Read		Writ]
	the EDID I	File froi	m comi	outer.					C)pen		Save			cksum (e	
Open ti	the EDID I	File froi	т со <i>т</i> и 2	outer. 3	4	5	6	7	8)pen 9) [Save	c		cksum (e	
Open ti	he EDID 1 File				4 FF	5 FF	6 FF	7 00			A 00		C 00	Che		Confirm	e n	
Open d EDID EDID • 0 1	bite EDID File 0 00 00	1 FF 00	2 FF 00	3 FF 00	FF 00	FF 00	FF 00	00	8 00 00	9 00 00	00	B 00 00	00	Cher D 00 00	E 00 00	Confim F 00 00	e n	
Open ti EDID EDID > 0 1 2	File 0	1 FF 00 00	2 FF 00 00	3 FF 00 00	FF 00 00	FF 00 00	FF 00 00	00 00 00	8 00 00 00	9 00 00 00	00	B 00 00 00	00 00 00	Che D 00 00 00	E 00 00 00	F 00 00 00	e n	
<i>Open d</i> EDID EDID ► 0 1 2 3	File 0 00 00 00 00 00 00 00 00	1 FF 00 00 00	2 FF 00 00	3 FF 00 00 00	FF 00 00 00	FF 00 00 00	FF 00 00 00	00 00 00 00 00 00 00 00 00 00 00 00 00	8 00 00 00 00	9 00 00 00 00	00 00 00 00 00 00 00 00 00 00 00 00 00	B 00 00 00	00 00 00 00 00 00 00 00 00 00 00 00 00	Cher D 00 00 00 00	E 00 00 00 00	Confim F 00 00 00 00	e n	
<i>Open d</i> EDID- EDID ► 0 1 2 3 4	EDID File 0 00 00 00 00 00 00 00 00 00 00 00	1 FF 00 00 00 00	2 FF 00 00 00 00	3 FF 00 00 00	FF 00 00 00 00	FF 00 00 00 00	FF 00 00 00 00	00 00 00 00 00 00 00 00 00 00 00 00 00	8 00 00 00 00 00	9 00 00 00 00 00	00 00 00 00 00 00 00 00 00 00 00 00 00	B 00 00 00 00 00	00 00 00 00	Che D 00 00 00 00 00	E 00 00 00 00	F 00 00 00 00 00	e n	
Open d EDID EDID ► 0 1 2 3 4 5	EDID 1 File 0 00 00 00 00 00 00 00 00 00 00 00 00 00 00	1 FF 00 00 00 00	2 FF 00 00 00 00 00	3 FF 00 00 00 00 00	FF 00 00 00 00 00	FF 00 00 00 00 00	FF 00 00 00 00 00	00 00 00 00 00 00 00 00	8 00 00 00 00 00 00	9 00 00 00 00 00 00	00 00 00 00 00 00	B 00 00 00 00 00 00	00 00 00 00 00 00	Che D 00 00 00 00 00 00 00	E 00 00 00 00 00 00	Confim F 00 00 00 00 00 00	e n	
<i>Open d</i> EDID EDID FDID ↓ 0 1 2 3 4 5 6	EDID 1 File 0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	1 FF 00 00 00 00 00	2 FF 00 00 00 00 00 00	3 FF 00 00 00 00 00	FF 00 00 00 00 00 00	FF 00 00 00 00 00 00	FF 00 00 00 00 00 00	00 00 00 00 00 00 00	8 00 00 00 00 00 00 00	9 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00	B 00 00 00 00 00 00 00	00 00 00 00 00 00 00	Cher D 00 00 00 00 00 00 00 00	E 00 00 00 00 00 00 00	F 00 00 00 00 00 00 00	e n	
Open d EDID EDID ► 0 1 2 3 4 5 6 7	EDID File 0 00	1 FF 00 00 00 00 00 00	2 FF 00 00 00 00 00 00 00	3 FF 00 00 00 00 00 00 00	FF 00 00 00 00 00 00 00	FF 00 00 00 00 00 00 00	FF 00 00 00 00 00 00 00	00 00 00 00 00 00 00 00	8 00 00 00 00 00 00 00 00	9 00 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00 00	B 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00 00	Che D 00 00 00 00 00 00 00 00 00 00	E 00 00 00 00 00 00 00	F 00 00 00 00 00 00 00 00 00	e n	
<i>Open d</i> EDID EDID EDID ↓ 0 1 2 3 4 5 6	EDID / File 0 00	1 FF 00 00 00 00 00	2 FF 00 00 00 00 00 00	3 FF 00 00 00 00 00	FF 00 00 00 00 00 00	FF 00 00 00 00 00 00	FF 00 00 00 00 00 00	00 00 00 00 00 00 00	8 00 00 00 00 00 00 00	9 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00	B 00 00 00 00 00 00 00	00 00 00 00 00 00 00	Cher D 00 00 00 00 00 00 00 00	E 00 00 00 00 00 00 00	F 00 00 00 00 00 00 00	e n	

Factory Reset:

Click the Factory Reset button to do factory default reset. This default reset process will take about 10~15 seconds and it will be initialized all setting to original system state.

Advance Setting	×
OSD Border Rotation EDID Factory Reset	4
The "Factory Reset" will be initial all setting to orignal status. And the process would be cost 10~15 seconds.	
Factory Reset	
Clos	æ

(4)

) Chroma Key: It can turn on/off the Chroma key function and adjust the parameters of Chroma key.

🐹 Chroma Key		X
Output 2 Chroma Key: 📄 Enable Chroma Key Type: Binary Mode 👻]	
Noise Reduction: 📄 Enable	Area Gain	
Key Color Range	Key Color:	0 🚔 (0)
Red: 15 • ~ 0 •	Key->Nonkey:	0 🚔 (0)
Green: 15 🕶 ~ 0 💌	NonKey->Key:	0 🚔 (64)
Blue: 15 • ~ 0 •	NonKey:	0 🔶 (64)
		Apply

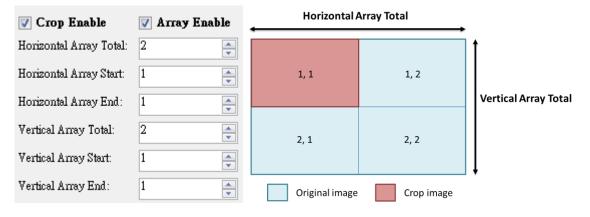
Crop function: This function is used to crop or clip an image.

Z Crop Function			×
Preview Crop		Window Rotating Conto	rl
Window 1	Window 2 💿	Window 1	Window 2
		Window 3	Window 4
	NEW	Crop Control Crop Window:	Window 1 👻
		Crop Enable	📄 Array Enable
		Horizontal Array Total:	1
		Horizontal Array Start:	1
		Horizontal Array End:	1
Window 3	Window 4	Vertical Array Total:	1
		Vertical Array Start:	1
		Vertical Array End:	1
		Percent Type:	Array Percent 👻
		Percent Enable	Pixel Enable
		Top: -1 🌦 %	0 A Pixel
		Bottom 0 🚔 %	0 A Pixel
		Left 0 🌧 %	0 🄶 Pixel
		Right 0 🍝 %	0 A Pixel
	The second	-) Shrink, +) Extend	Apply

In the Preview Crop, it can preview the range and effect of video crop with the adjustment.

- > Crop Enable: Enable crop function
- > Array Enable: Enable array parameter

The setup diagram is shown as below.



(5)

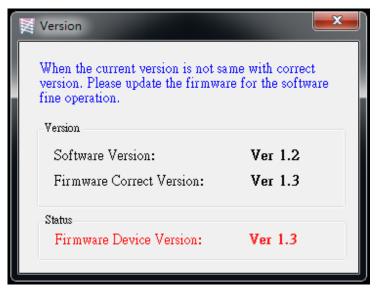
Percent Enable: Allows user to adjust video layout size by percentage concept.
 The setup diagram is shown as below.

Percent 1	Гуре:	Array Percent 🔹 👻			
V Perc	ent Enable	📄 Pixel Enable		\$ 	
Top:	10 🎅 %	0 A Pixel	Extend ←	> Shrink	
Bottom	10 🊔 %	0 A Pixel			
Left	10 🄶 %	0 A Pixel		ĵ	
Right	10 🄶 %	0 A Pixel			
-) Shrink, +) Extend			Original image	Crop image	

> Pixel Enable: Allow user to adjust video layout size by pixels.

The video crop by pixel and percent are almost same. The differences come from the adjustment ratio.

(6) Version: Read the software and firmware version.



3. Output Resolution:

Set the output resolution. When setting the different resolutions, the parameters of PAP and custom layout (position and size) will accordingly change.

0	utpu	t Resolution:	
		1920 x 1080@60Hz	
		1920 x 1200@60Hz	
	~	1920 x 1080@60Hz	
		1680 x 1050@60Hz	
		1600 x 1200@60Hz	
		1440 x 900@60Hz	
		1366 x 768@60Hz	
		1280 x 1024@60Hz	
		1280 x 960@60Hz	
		1280 x 768@60Hz	
		1280 x 720@60Hz	
		1024 x 768@60Hz	
		720 x 480@60Hz	
		800 x 600@60Hz	
		640 x 480@60Hz	

4. Default layout and Custom layout:





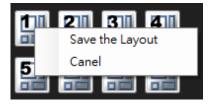
 \triangleright

Default layout: Use factory preloaded video layouts.



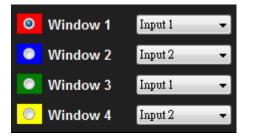
Custom layout: Use custom pre-saved video layouts

In this part, you can adjust the size and position of output screen. If you want to save the layout, please click the right button of mouse to save this layout into device.



5. Window selection and input mapping

For each display window, user can assign arbitrary video input here.



6. Window setting

In here, you can adjust the size, position or other settings of the specified window.

Image Visible:	🥅 Visible
H Start:	0 🍨
V Start:	0 🍨
Width:	200 🚔
Height:	200 🚔
	Apply
Window OSD:	🔲 Enable
Border:	🔲 Visible
Blinking (Tally):	On Off
Border Color:	
Label Position:	Top - Left 🛛 🔻
Window Text:	🔲 Visible
Custom WText:	🥅 Enable
Input Text	🥅 Visible
Custom IText:	🥅 Enable

Method C: Firmware Update

1. Unfold the Video Processor folder and choose the firmware update executable file. The firmware update window shows up as below.

🚡 Tool			
Double Dual Viewer V1	L.9	×	
Please follow the steps to update the device.			
Update Setting	Please select the correct co button to set the number a	unport or push the "Scan" utomatically.	
Firmware Update	- Com Port		
OSD Font Update			
Splash Screen Update			
		Scan	

2. Please select the correct COM port or click Scan

button to connect the device.

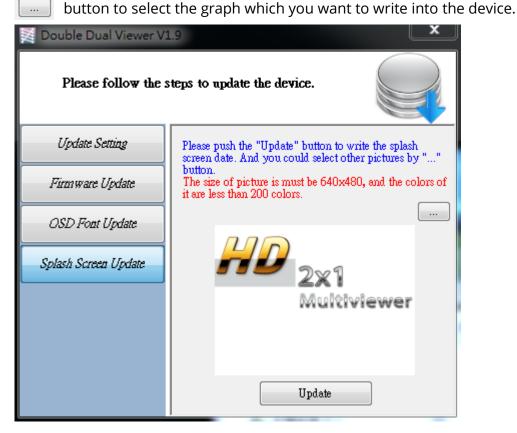


4. If you want to change OSD (window label) font, please click "OSD Font Update" window and click

Update button to change OSD font.

🔀 Double Dual Viewer V1.9				
Please follow the steps to update the device.				
Update Setting	Please push "Update " button to write OSD font data.			
Firmware Update				
OSD Font Update	!"#\$%&'()*+,/ 0123456789:;<=>?			
Splash Screen Update	@ABCDEFGHIJKLMNO PQRSTUVWXYZ[\]^ abcdefghijklmno			
	`abcdefghijklmno pqrstuvwxyz{ }~			
	Update			

5. If you want to change the boot screen, please click "Splash Screen Update" window and click the



WARRANTY

The SELLER warrants the **AV-GM0903-S1 Dual-View Video 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-GM0903-S1 features and specifications is subject to change without further notice.

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

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