Dual-View Video Enhancing Processor with TV Tuner

Safety and Notice

The **AV-GM08Q3-S1 Dual-View Video Enhancing Processor with TV Tuner** has been tested for conformity to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the AV-GM08Q3-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.

Table of Contents

Overview

The **AV-GM08Q3-S1 Dual-View Video Enhancing Processor** is an advanced video processor to enhance the video quality for multimedia presentations. It is an ideal solution for applications where two video signals must be displayed on a single display. It supports up to nine video inputs, of which two, one digital and one analog, can be outputted simultaneously in Picture-In-Picture (PIP) or Picture-Aside-Picture (PAP) modes. The AV-GM08Q3-S1 combines state-of-the-art technologies, such as video de-interlacer, scaler, color management, format conversion, and video switch into one box and allows you to manipulate output images, wherever position and whatever sizes you want for viewing two computers or two video signals or a combination through the control software*.

The embedded scaler converts signals from input sources to match the native resolution of monitors, flat panel displays, projectors as well as user-selectable output settings up to WUXGA (1920 x 1200). Dual outputs are provided in both analog (VGA) and digital (DVI) format, one is connected to remote display and the other is connected to on-site display for real time monitoring.

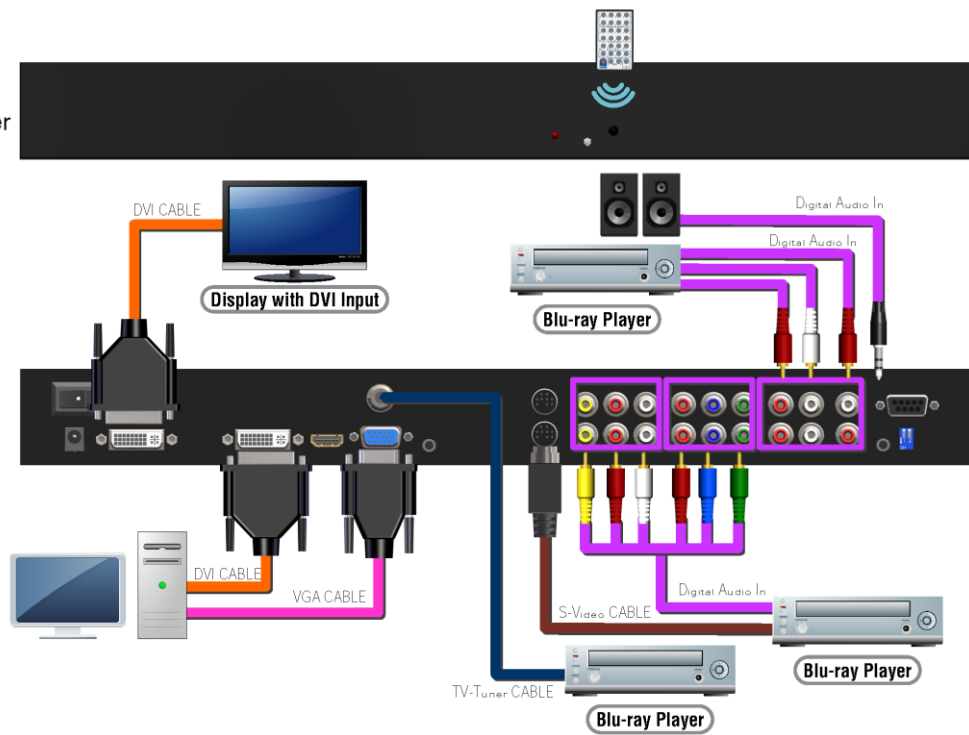*Software will be available soon.*

Figure 1: Configuration Diagram

Features

- Two graphics (DVI / VGA) and six video (two S-Video / two component / two composite / TV tuner*****) Inputs, from 640x480 to 1920x1200, interlaced or progressive.

- Dual outputs (DVI / VGA), 640x480 to 1920x1200 with default resolution 1280x1024.

- Support audio inputs from either stereo RCA or PC ear phone.

- Dual stereo audio outputs

- PIP, PAP, Full screen modes and adjustable size & position through software.

- Dynamic scaling to provide better visual experience

- Titles, borders and colored backgrounds.

- Resize, position and blend output video.

- Image parameters and layouts are automatically saved in flash memory and can be recalled for later use.

- Several Image parameters and layouts can be saved in computers and can be loaded for later use.

- Video parameters adjustable (brightness, contrast, color temperature, etc.).

- User-selectable output settings, up to 1920x1200.

- Also perfectly as a video screen splitter, a video converter and a video switcher.

- Firmware upgradable for support of new features and technology enhancements.

- IR control and software control through RS-232.

- Automatically power-saving mode.

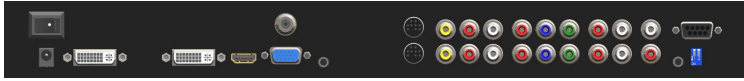**NTSC or PAL & SECAM versions are available.*

Specifications

Model Name		AV-GM08P3-S1	AV-GM08Q3-S1
Technical			
Role of usage		Multiplexer / video processor	
Dual output support		Yes	
HDCP compliance		Yes	
Video bandwidth		DVI [Single-link 4.95Gbps] Component [30MHz]	VGA [165MHz] Composite [13.5MHz]
TV tuner support		No	NTSC or PAL & SECAM [upon request]
Video support		480i / 480p / 720p / 1080i / 1080p60 / 1920x1200@60 / 1600x1200@60	
Audio support		Yes	
Control		IR and RS-232	
PIP / PAP		Yes	
Cascadable		Yes	
Input TMDS signal		1.2 Volts [peak-to-peak]	
ESD protection		Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]	
PCB stack-up		6-layer board [impedance control — differential 100Ω; single 50Ω]	
Input		1x VGA + 1x DVI + 2x component + 2x composite + 2x S-video + 1x RS-232	1x VGA + 1x DVI + 2x component + 2x composite + 2x S-video + 1x HDMI + 1x RF + 1x RS-232
Output		1x DVI + 1x VGA	
IR remote control		Electro-optical characteristics: τ = 25° / Carrier frequency: 38kHz	
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]	
RCA connector		75Ω female	
RF connector [AV-GM08Q3-S1]		F connector [75Ω female for RG-6/U cable]	
Mechanical			
Housing		Metal case	
Dimensions (L x W x H)	Model	440 x 145 x 44mm [1'5" x 5.7" x 1.7"]	
	Package	230 x 545 x 110mm [9'1" x 1'10" x 4.3"]	
	Carton	580 x 570 x 260mm [1'11" x 1'11" x 10.2"]	
Weight	Model	1.8kg [4.0 lbs]	
	Package	3.2kg [7.0 lbs]	
Fixedness		1U rack-mount with ears	
Power supply		5V 4A DC	
Power consumption		12 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]	

Package Contents	1x AV-GM08P3-S1 or AV-GM08Q3-S1 1x DVI to DVI&VGA breakout cable 1x IR remote controller 1x DVI to HDMI cable 1x 5V 4A power adapter 1x DVI to VGA adapter 2x 1U rack mounting-ear 1x RS-232 to USB adapter 1x User Manual

Package Content

1. AV-GM08Q3-S1

2. DVI to DVI & VGA breakout cable

(DDVY01)

3. DVI to HDMI cable

4. DVI to VGA adapter (DVA01)

5. RS-232 to USB Adapter

6. IR remote controller

7. 5V 4A DC power adapter

8. 1U rack mounting-ear

9. User Manual

Please visit *www.gomax-electronics.com/download.htm* to download software & firmware updates

Inputs and Outputs

The AV-GM08Q3-S1 has nine inputs and accepts two graphics and seven video signals. There is a concept of main channel and sub channel for this device. You can pick up two of the nine inputs, one is for main channel and the other is for sub channel. To display two of them simultaneously on the same screen, the two chosen videos must be from digital and analog inputs, or the same source. Except DVI, any other video sources are analog. Figure 2 shows the connectors on the rear panel of AV-GM08Q3-S1 while Table 1 and 2 list separately the available video and audio inputs of the AV-GM08Q3-S1.
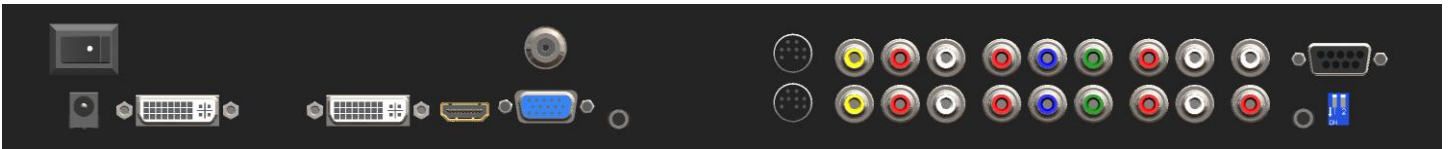

Figure 2: Rear Panel

> ***** *These IO ports support various resolution from 640x480 up to 1920x1200, for more detail of the supported modes, please refer to the Appendix for supported resolutions.*

Table 1: Input/Output Connectors

Input Connector	Video Input
DVI-IN	DVI
HDMI-IN	HDMI
VGA-IN	VGA
RF-IN	TV tuner [NTSC or PAL & SECAM]
S-Video-IN	2x S-video
CVBS-IN	2x composite (yellow)
YPbPr-IN	2x component
	Audio Input
Audio-IN	Audio for DVI-IN or VGA-IN
CVBS-IN	Composite & S-video (red & white)
YPbPr-IN-Audio	Component audio
	Device Control
RS-232	RS-232 control port
Output Connector	Audio/Video Output

DVI-I-OUT	VGA & DVI dual video output
Audio-OUT (RCA)	Stereo analog output
Audio-OUT (Earphone)	Stereo analog output

Safety Precautions

I.   To prevent fire or shock hazards, do not expose this device to rain or moisture.

II. When connecting other products such as DVD players, and personal computers, you should turn off the power of this product for protection against electric shocks.

III. The product should be placed more than one foot away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat. In addition, do not cover any material or devices on the top of the device.

IV. Do not use immediately after moving from a low temperature to high temperature, as this causes condensation.

V.   Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious injury to a child or adult and serious damage to the product.

VI. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

VII. Do not allow the same still picture to be projected for a long time or an abnormally bright video picture to be projected. The video image could be burned in to the display device.

Installation Procedures

Unpacking

Remove the AV-GM08Q3-S1 from the shipping container and examine it for any signs of shipping damage or missing items (check with package contents above). All shipping items should be saved if the product is to be moved or returned for service. Shipping unit back to dealers for service not in the original box may result in voiding warranty or additional cost.

Placement

The unit uses convection to cool. A fan is not needed, so do not block the sides of this device or stack another device on the top or bottom of the AV-GM08Q3-S1.

Connections

We recommend the highest quality cables for both input and output connections.

1. Switch off the AV-GM08Q3-S1 and all devices that you want to connect.

2. Connect a monitor, a projector or other displays that comes with DVI or VGA inputs by using a male-to-male DVI (VGA) cable to AV-GM08Q3-S1 DVI output (you can connect 2 displays equipped with DVI and VGA respectively by a DVI to DVI&VGA breakout cable **(DDVY01)**).

3. Plug in video sources to the desired input connectors.

4. Connect a device equipped with DVI output (such as a PC) to the DVI connector of the breakout cable.

5. Connect a device equipped with VGA output (such as a laptop) to the VGA connector of AV-GM08Q3-S1

6. Connect your computer with the AV-GM08Q3-S1 by a 9-pin RS-232 adapter and then install the software.

7. Plug in power adapter cable into 5V DC power jack.

8. Switch on all devices connected and then switch on the video processor and then press "menu" to display OSD menu.

9. Press down source key or video hot keys to switch among all the video/graphic sources.

10. Once the Main Channel has a video selected, the corresponding audio is automatically set.

11. In PIP or PAP mode, use hot keys designed for PIP or PAP on the top of IR remote controller.

12. For detailed IR remote control operation, please refer to the On Screen Display menu and IR operating instruction.

The AV-GM08Q3-S1 is packaged with a remote control that allows for direct access to most commands used to control the video processor.

Figure 4: Remote Control

Table 2: IR Functionalities

(1)	Mute	Mute the audio output
(2)	Power	Power on/off the device
(3)	Pip	Change to PIP Display mode
(4)	Scan	Enter Auto TV Tuner Mode while the input is TV
(5)	Split	Change to PAP Display mode
(6)	Pip Asp	PIP Display Aspect Ratio Adjustment
(7)	Pip Source	Press to select a source for PIP channel
(8)	Pip Size	Press to change PIP channel size
(9)	Pip Pos	Press to change PIP channel position on Display
(10)	0-9	Number input
(11)	Vol+	Increase audio volume
(12)	Vol-	Decrease audio volume
(13)	Ch+	Increase TV channel number
(14)	Ch-	Decrease TV channel number
(15)	Jump	Switch back and forth between the two recently TV channels
(16)	Reset	Factory Reset
(17)	Freeze	Freeze output display
(18)	Sleep	Enter sleep mode
(19)	Left/Right/UP/Down	Direction Control keys
(20)	Enter	Confirm Button
(21)	Menu	Display OSD menu
(22)	Exit	Move back to previous option or exit OSD menu
(23)	Source	Press to select a source for main channel
(24)	Info	Show the timer and input channel name
(25)	HDMI	HDMI Switch **
(26)	CC	Show close caption if embedded
(27)	Mode	Reserved
(28)	Auto	Auto adjustment when VGA is selected
(29)	Aspect	Display Aspect Ratio Adjustment
(30)	TV	Hot key to select TV input
(31)	CV1	Hot key to select composite input 1
(32)	CV2	Hot key to select composite input 2
(33)	YUV1	Hot key to select component input 1
(34)	YUV2	Hot key to select component input 2
(35)	SV1	Hot key to select S-Video input 1
(36)	SV2	Hot key to select S-Video input 2

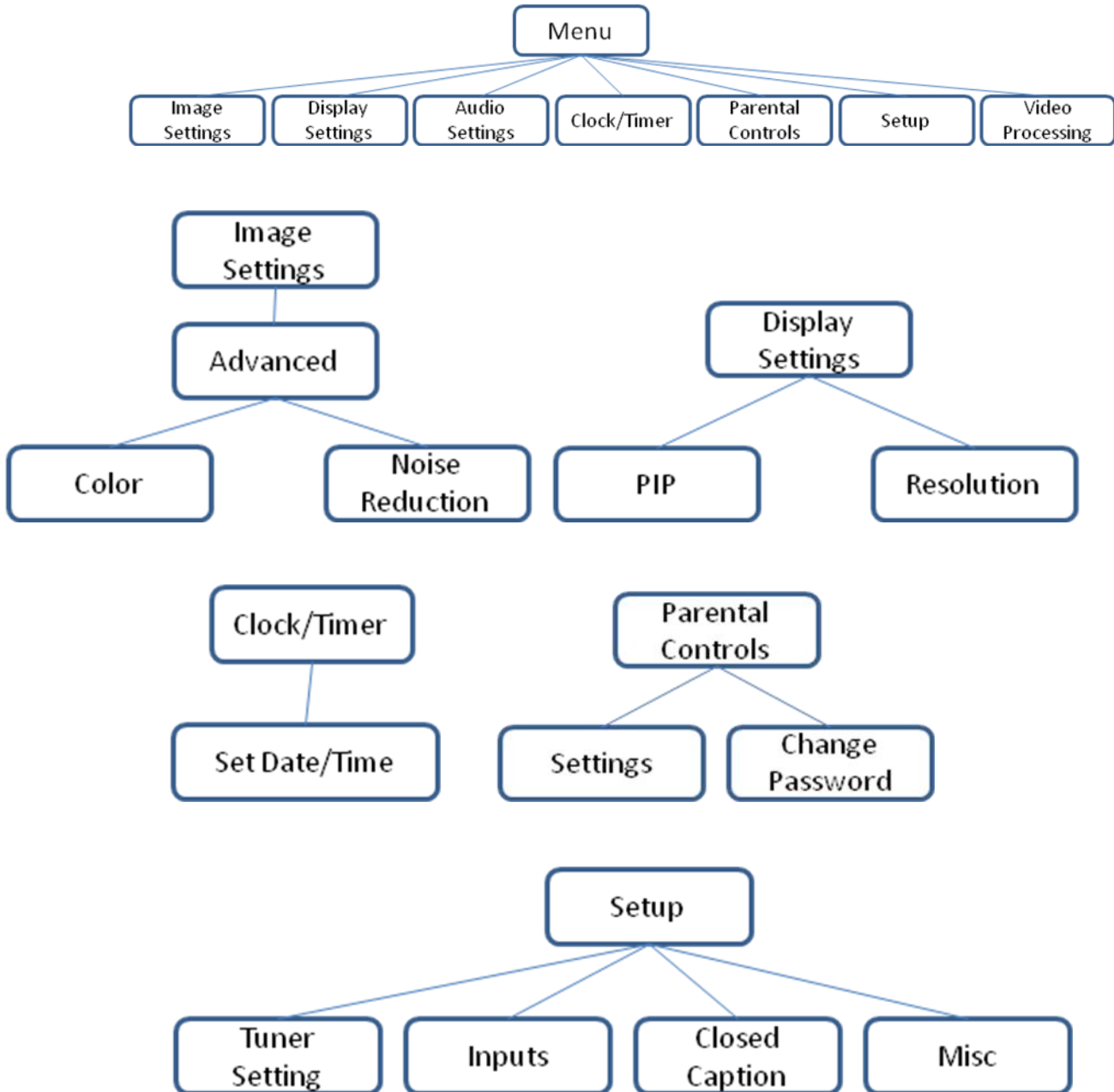| (37)	VGA	Hot key to select VGA input
(38)	DVI	Hot key to select DVI/HDMI input
(39)	F1	Function Key 1
(40)	F2	Function Key 2
(41)	F3	Function Key 3

On Screen Display Menu

Image Settings

Scheme: Normal, Vivid, Cinema, Game, Sport

Five slider controls for video quality: Brightness, Contrast, Saturation, Hue, Sharpness

Advanced: Noise Reduction, Flash tone, Dynamic Contrast, Color

     Noise Reduction: MPEG NR (MPEG Noise Reduction)

     Temporal NR (Temporal Noise Reduction)

     Flash tone: Enhance Flash

     Dynamic Contrast: 5 Level Control

     Color: User Defined Color Temperature

Display Settings

Auto Aspect Ratio   Aspect Ratio: 16:9, Letter Box, Pillow Box Expand

Resolution: Define the output's resolution

800x600@60, 1024x768@60, 1280x1024@60, 1280x720@60, 1366x768@60, 1440x900@60, 1400x1050@60, 1920x1080@60, 1920x1200@60, 1600x1200@60

PIP: PIP Mode: off, Large PIP, Small PIP, Side by Side (PBP)

     PIP Position: Bottom-Right, Bottom-Left, Top-Left, Top-Right

     Multi-PIP Configuration: POP7, 3x3 GRID, POP3, POP12

     Multi-PIP On*: YES, NO

     Pip Blend: Slider Control on the level of blending Main & Sub Channels

Audio Settings

Three Slider Control of Audio: Bass, Treble, Balance   Auto Volume*: On, Off

Sound Mode: Stereo, Mono, SAP   Line Out: Fixed Volume*: Fixed

Volume, Variable Volume   Speakers: On, Off

SPDFI Out*: On, Off

Clock / Timer

Sleep Timer: On, Off   Wake Alarm: On, Off   Set Date/Time: To setup the date and time

Parental Controls

Password: Default 1111

Setup

Inputs: Name each input.   Closed Caption: Embedded CC decoder for various formats.

Misc: OSD language, Factory Reset

Video Processing

Noise Reduction, Video Processing

System Requirement and Precautions

1. The AV-GM08Q3-S1 provides a software control program which runs under Microsoft Windows 98, 2000, XP, Vista through the interface of RS-232 serial control.

2. Before you click on the icon of the software, make sure you have secured the connection between your computer COM port and the AV-GM08Q3-S1 and switched on the AV-GM08Q3-S1 with green LED light.

3. The AV-GM08Q3-S1 has remote control and software control. To make sure all information shown in the software is synchronized with those in the device, please click "Connect" to acquire the latest data from the AV-GM08Q3-S1 after you press any key on the remote control.

Software Connection Instruction

Will be available through the internet download.

Troubleshooting

Problem	Recommendations
No power	✓ Check if you are using 5V DC adapter and it is firmly plugged into the AV-GM08Q3-S1
	✓ If you are recovering from power outage, accidentally unplug the adapter or other power surge conditions, leave the device off for a while and then power it on again.
No/ Erratic video	✓ Make sure all cables are in good working condition and properly connected to the AV-GM08Q3-S1 and displays.
	✓ Configure the output video resolution so that it doesn't excess the native resolution of the display. (in this case, the message of "out of range" or "format not supported" is usually showed on your screen)
	✓ Make sure a video source is selected to the main channel. (press "Menu" and check if the first item has a video source selected or press "Source" to select a video source for the main channel)
Poor quality	✓ We suggest that don't use T-connectors to split your video source into to images displayed on two different screens. That will lower output video quality. Use a distribution amplifier instead of T-connectors.
	✓ Make sure the video source is not compressed and maintains the highest native resolution.
Image position shifted	✓ Press "Auto" key on the remote control. *Auto configuration only works at VGA and YPbPr inputs.
Wrong color	✓ Press "F3" key for auto configuration. *Auto color configuration only works at VGA and YPbPr inputs.
Advanced Engineering Menu	✓ Press "F1," "1," "2," "3" keys sequentially on the remote control. An embedded advanced engineering menu shows up.

Limited Warranty

The SELLER warrants the **AV-GM08Q3-S1 Dual-View Video Enhancing Processor with TV Tuner** to be 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 surges.

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 are limited to a 30 day warranty and cable 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-GM08Q3-S1 features and specifications is subject to change without further notice.

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

April, 2018

[DVI-IN] socket

Supported Mode	Resolution		
NTSC – 480i / 525i	720x240 @60Hz	MAC	832x624 @75Hz
PAL– 576i / 625i	720x288 @50Hz	VESA	1024x768 @60Hz
PAL– 480p / 525p	720x483 @60Hz	MAC	1024x768 @60Hz
PAL– 480p (16:9)	960x483 @60Hz	VESA	1024x768 @70Hz
PAL– 576p / 625p	720x756 @50Hz	IBM	1024x768 @72Hz
HDTV – 720p	1280x720 @50Hz	VESA	1024x768 @75Hz
HDTV – 720p	1280x720 @60Hz	MAC	1024x768 @75Hz
HDTV – 1080i	1920x540 @50Hz	VESA	1024x768 @85Hz
HDTV – 1080i	1920x540 @60Hz	VESA	1152x864 @75Hz
HDTV - 1080p	1920x1080 @30Hz	MAC	1152x870 @75Hz
VESA	720x400 @85Hz	SUN	1152x900 @66Hz
VESA	640x350 @85Hz	SUN	1152x900 @76Hz
VESA	640x400 @85Hz	VESA	1280x960 @60Hz
IBM	720x400 @70Hz	VESA	1280x960 @85Hz
IBM	720x350 @70Hz	VESA	1280x1024 @60Hz
IBM	640x350 @70Hz	HP	1280x1024 @60Hz
IBM	640x400 @70Hz	IBM	1280x1024 @67Hz
VESA	640x480 @60Hz	HP	1280x1024 @72Hz
MAC	640x480 @67Hz	VESA	1280x1024 @75Hz
VESA	640x480 @72Hz	SUN	1280x1024 @76Hz
VESA	640x480 @75Hz	VESA	1600x1200 @60Hz
VESA	640x480 @85Hz	VESA	1920x1200 @60Hz

VESA	800x600 @56Hz
VESA	800x600 @60Hz
VESA	800x600 @72Hz
VESA	800x600 @75Hz
VESA	800x600 @85Hz

[VGA-IN] socket

Supported Mode	Resolution		
480p / 525p	720x483 @60Hz	VESA	800x600 @56Hz
480p (16:9)	960x483 @60Hz	VESA	800x600 @60Hz
HDTV – 720p	1280x720 @50Hz	VESA	800x600 @72Hz
HDTV – 720p	1280x720 @60Hz	VESA	800x600 @75Hz
HDTV – 1080i	1920x1080 @30Hz	VESA	800x600 @85Hz
HDTV - 1080p	1920x1080 @60Hz	VESA	1024x768 @60Hz
VESA	640x350 @85Hz	VESA	1024x768 @70Hz
VESA	640x400 @85Hz	VESA	1024x768 @75Hz
VESA	640x480 @60Hz	VESA	1024x768 @85Hz
VESA	640x480 @72Hz	VESA	1152x864 @75Hz
VESA	640x480 @75Hz	VESA	1280x960 @60Hz
VESA	640x480 @85Hz	VESA	1280x960 @85Hz
VESA	720x400 @85Hz	VESA	1280x1024 @60Hz
		VESA	1600x1200 @60Hz
		VESA	1920x1200 @60Hz

[DVI-OUT] socket

Supported Mode	Resolution		
HDTV – 720p	1280x720 @60Hz	VESA	1366x768 @60Hz
HDTV – 1080p	1920x1080 @60Hz	VESA	1400x900 @60Hz
VESA	800x600 @60Hz	VESA	1400x1050 @60Hz
VESA	1024x768 @60Hz	VESA	1600x1200 @60Hz
VESA	1152x864 @75Hz	VESA	1920x1200 @60Hz
VESA	1280x1024 @60Hz		