IOGEAR®

AVIOR™

User Manual

4x2-Port HD Audio / Video Switch Splitter

GHSW8242
PART NO. M1202

Table of Contents

System Requirements

The following equipment is required to complete an GHSW8242 installation:

Source Device
HDMI Type A output connector(s)
Note: A DVI/HDMI adapter is required when connecting a DVI source device.

Display Device
Up to 2 display devices or receivers with an HDMI Type A input connector

Cables
6 HDMI cables
Note:
1. No cables are included in this package. We strongly recommend that you purchase high-quality cables of appropriate length since this will affect the quality of the audio and video display.
2. If you wish to utilize the GHSW8242's high-end serial controller function, you will also need to purchase an appropriate RS-232 cable. See Installing the RS-232 Controller, page 10.

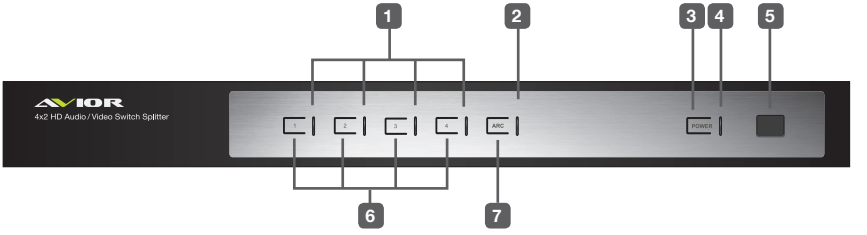
Package Contents

The GHSW8242, 4x2-Port HD Switch Splitter package consists of:

- 1 GHSW8242 4x2 Port HD Switch Splitter
- 1 IR Remote Control
- 1 IR Receiver Cable
- 1 Foot Kit
- 1 Power Adapter
- 1 Quick Start Guide
- 1 User Manual
- 1 Rack Mount Kit

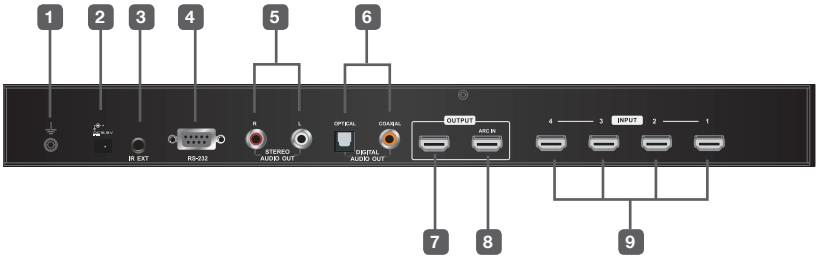
Overview

Front View



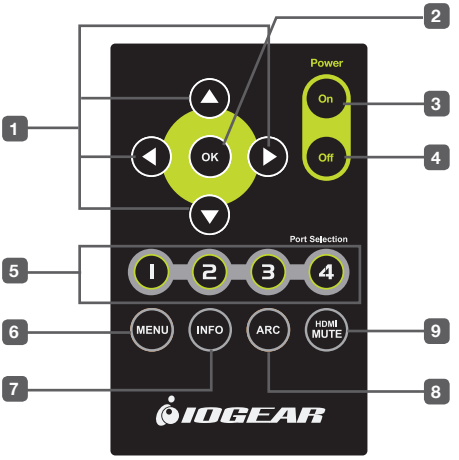
1. **Port LEDs (4)**
   The selected port's green LED lights up to indicate that the port is selected.
2. **ARC LED**
   The blue LED lights up when the ARC function is enabled.
3. **Power Button**
   Press this button to turn the power on / off to the unit.
4. **Power LEDs**
   - The green LED lights up when the switch is powered on.
   - The orange LED lights up to indicate that the power is in standby mode.
5. **IR Receiver**
   This receives signals from the IR remote control.
6. **Port Selection Buttons**
   Pressing a port selection pushbutton routes the A/V source from the corresponding input port to the output port for display.
7. **ARC button**
   Press this button to enable / disable the ARC function.

Rear View



1. **Grounding Terminal**
   The grounding wire attaches here.
   Note: The grounding wire is not included in this package.
2. **Power Jack**
   The power adapter cable plugs in here.
3. **IR Extender Port**
   Connect the IR Extender to this port.
4. **RS-232 Serial Port**
   For input source selection and high-end system control, including firmware upgrades.
5. **RCA Audio Ports**
   The red port is for the right audio channel, and the white port is for the left audio channel.
6. **Digital Audio Ports**
   Connect the optical and coaxial audio cables to these ports.
7. **HDMI Out (port 2)**
   Connect an HDMI display or projector
8. **HDMI Out (port 1)**
   Connect to HDMI display or projector
   (ARC In)
   The ARC audio can be transmitted back (to audio receivers) through this connectivity
9. **HDMI In**
   HDMI source devices can plug into any of four available ports.

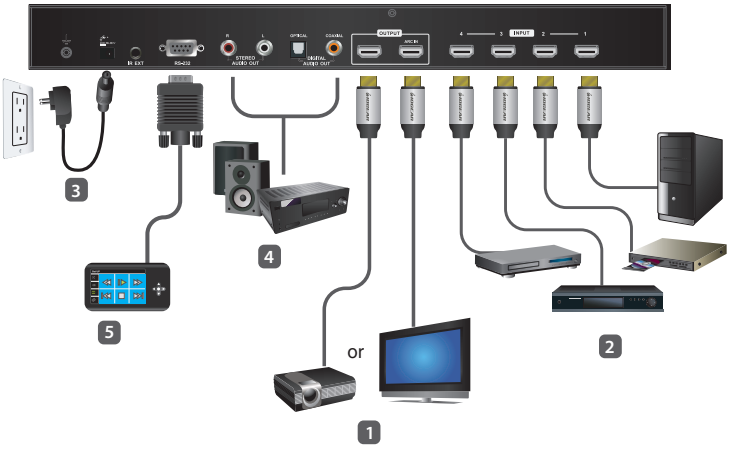
IR Remote Control



1. **Up / Down / Left / Right Buttons**
   Press the Up / Down / Left / Right button to cycle through the OSD menu/selection.
2. **OK**
   Press to confirm the selection on the OSD screen.
3. **On**
   Press to power on the GHSW8242.
4. **Off**
   Press this to power off the GHSW8242.
5. **Port Selection Buttons1~4**
   Press to select content from the desired port
6. **Menu**
   Press to enable / disable the OSD menu.
7. **Info Button**
   Press to display information about the source device on the upper left side of the screen. The information can include: Source port number; Source port number + Source Type; or turned off.
8. **ARC**
   Press to Enable / Disable ARC function. See ARC Commands, page 11.
9. **HDMI Mute**
   Press to Enable / Disable audio for the output HDMI port. See Mute Commands, page 13.

Installation

Installation of the GHSW8242 is simply a matter of plugging in the appropriate cables.
To install the switch, refer to the installation diagram below as you perform the following steps:



1. Use an HDMI cable to connect the HDMI video display to the HDMI output port on the rear of the GHSW8242.
2. Use HDMI cables to connect the HDMI source device(s) to the HDMI input ports on the GHSW8242.
3. Plug the provided power adapter into an appropriate AC power source; plug the power adapter cable into the Power Jack on the GHSW8242.
4. Connect your audio devices (such as speakers or AVRs) to the Stereo Audio Ports or Digital Audio Ports.
5. (Optional) To edit the GHSW8242 system settings through the RS-232 port, connect the hardware / software controller or PC here.

This completes the basic installation of the GHSW8242. You may now power on the display and source devices.

Installing the RS-232 Controller

In order to use the RS-232 serial interface to attach a high-end controller (such as a PC) to the GHSW8242, use a serial cable such as a modem cable. The end connecting to the GHSW8242 should have a 9-pin male connector. Connect this to the serial interface on the rear of the GHSW8242. To connect RS-232 via the USB ports on a computer, use a USB-to-serial cable by IOGEAR (Part No. GUC232A, sold seperately). Refer to number 5 on the previous diagram.
Note: To configure the controller serial port, see page 12.

Operation

The GHSW8242 offers easy and flexible source device selection from the front panel buttons, the supplied remote control, or through the RS-232 serial interface.

Note:
1. When the GHSW8242 is powered on and there is no video input source connected, it automatically selects Port 1 as the active port (i.e., the Port 1 LED lights up). You may choose one of the methods outlined below to select a different port as your active port.
2. The GHSW8242 takes about 10-20 seconds to boot up the system and apply the system configuration when first powered on.

Manual Selection
To select a source device, press the button that corresponds to the port to which it is connected.
Note: The Port LED (green) light indicates which port is currently selected.

Remote Control Selection
To select a source device with the remote control, press the number button that corresponds to the port to which it is connected.
See IR Remote Control, page 7 for more details.

Note: Aim the remote control unit at the IR receiver located on the front panel of the GHSW8242. For optimum performance, make sure there is a clear line-of-sight between the remote control unit and the IR receiver.

Power On Detection
The Power On Detection feature enables the GHSW8242 to do the following:

- It automatically switches to the next port when the current active port is powered off.
- When the GHSW8242 is turned on, the least numbered port with a video input source connected acts as the active port. To select another port, see Manual Selection above.

If you have manually selected an active port, and the video input source device is disconnected (but not powered off), the GHSW8242 does not use any other powered on video input source device.

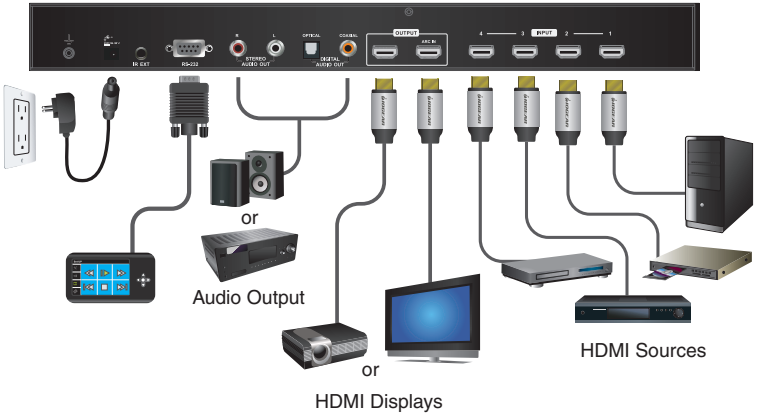
Note:
1. Whenever the GHSW8242 is powered on and there is no video input source connected, it automatically selects Port 1 as the active port (i.e., the Port 1 LED lights up).
2. Some video sources/devices may use a different Hot Plug Detect (HDP) implementation that prevents the Power On Detection feature from working properly.

Audio Return Channel (ARC)

Audio Return Channel (ARC) allows an HDMI display that receives or plays content via air waves or Internet applications (such as a TV or STB connected to a satellite antenna) to send audio “upstream” to your HDMI audio / video receiver using the same HDMI cable.

Initial Setup

The GHSW8242 supports dual HDMI output for dual view, such as two HDTV or audio/video receiver (AVR) applications, as shown in the following diagram.



The audio/video coming from the HDMI sources (Blu-ray, DVD, etc.) are received by the GHSW8242 and then passed on to the HDMI displays / receiver (TV, projector or AVR).

However if the HDMI audio or video is coming from the TV (through a satellite antenna or Internet Apps), you can enable ARC so that audio is sent to the AVR/HDMI receiver through the existing HDMI cable or the device(s) connected to the audio output port(s). See p.11 for the diagram.

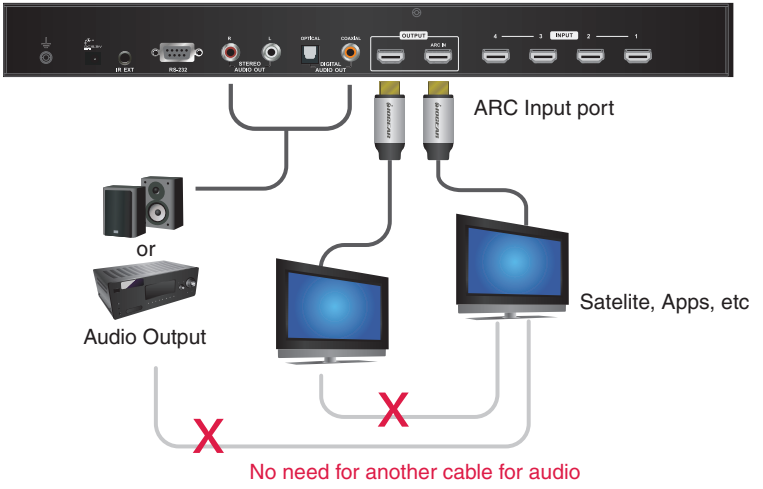
Note:

1. Without ARC, you must connect another cable, specifically for passing audio, from the TV to the AVR or the device(s) connected to the audio output port(s).
2. The ARC function requires HDTV built-in ARC function to be connected to the correct HDMI output port. Check your HDTV’s user manual for this information.

Enabling ARC
With ARC enabled, the TV can act as the HDMI source and send audio “upstream” to the AVR or speakers connected to the GHSW8242. Press the ARC button on the front panel of the GHSW8242 to enable or disable ARC.

Note:
The HDMI output port 1 is also the ARC input port, depending on whether the ARC feature is enabled or disabled. See ARC Commands, page 18 for more information.

In the following diagram, audio from the TV goes to the GHSW8242 through the ARC Input port, and is then passed on to the AVR via the analog or digital outputs; RCA, optical or coaxial audio connectors.



Note:

1. **The scenario above works only if the TV supports HDMI and has ARC enabled.**
2. **The ARC LED (blue) lights up to indicate that the ARC function is enabled. There will be no audio output if your HDTV does not support ARC function or if the ARC function is not enabled**

RS-232 Serial Interface

RS-232 Serial Interface
The GHSW8242's built-in bi-directional RS-232 serial interface allows system control through a high-end controller, PC, and/or home automation / home theater software package.

Configuring the Serial Port
The controller's serial port should be configured as follows:

Switch Port Commands
The formulas for Switch Port commands are as follows:

1. Switch Command + Input Command + Port number [Enter]
   For example, to switch input port to port 02, type the following:
   sw i02 [Enter]
2. Switch Command + Control [Enter]
   For example, to switch to the next port, input the following:
   sw + [Enter]

Baud Rate	19200
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

The table to the right show the possible values and formats for the Input command, Port Number and Control:

Note:
1. Each command string can be separated with a space.
2. The **Port Number** command string can be skipped, and the default value will be used.

Command	**Description**
sw	Switch command
Input Command	**Description**
i	Input command
Port Number	**Description**
xx	01-04 port (default is 01)
Control	**Description**
on	Turn on the display
off	Turn off the display
+	Next port
-	Previous port

The following table shows the available command list:

Command	Input	Port	Control	Enter	Description
sw	i	xx		[Enter]	Switch Input Port
sw			on	[Enter]	Turn on (Display out)
			off	[Enter]	Turn off (No output)
sw			+	[Enter]	Switch to the next input
			-	[Enter]	Switch to the previous input

Mute Commands
Enable or disable audio coming from the output HDMI port using the following command:

Mute Command + Control [Enter]

The following table show the possible values and formats for the **Control** command:

Command	Description
mute	Enable / Disable audio of HDMI output port
Control	**Description**
on	Mute on: audio from HDMI output port is disable
off	Mute off: audio output enabled (default)

Note: Each command string can be separated with a space.

The following table shows the available command list:

Command	Control	Enter	Description
mute	on	[Enter]	Mute on (no audio)
mute	off	[Enter]	Mute off (audio out)

ARC Commands
Audio Return Channel (ARC) allows a source device (TV, STB, etc.) to send audio "upstream" to an audio/video receiver using only one HDMI cable. The formula for enabling/disabling ARC is as follows:

ARC Command + Control [Enter]

The following table show the possible values and formats for the **Control** command:

Command	Description
arc	Enable / Disable
Control	**Description**
on	ARC on; output audio passes from HDMI output port 1 to HDMI output port
off	ARC is disable (default)

The following table shows the available command list:

Command	Control	Enter	Description
arc	on	[Enter]	ARC on
arc	off	[Enter]	ARC off

EDID Commands

Extended Display Identification Information (EDID) is a data format that contains a display's basic information and is used to communicate with the video source / system. You can set up which EDID mode the GHSW8242 uses with the following command:

EDID Command + Control [Enter]

The following table show the possible values and formats for the **Control** command:

Command	Description
edid	Enable EDID selection
Control	**Description**
port 1	Implement the EDID of the connected display to Port 1, and pass it to the video source
auto	Implement the EDID of all connected displays. The GHSW8242 uses the best resolution for all displays (default)
default	Implement IOGEAR's default EDID (720p)

The following table shows the available command list:

Command	Control	Enter	Description
edid	port1	[Enter]	The EDID from Port 1 is passed to the video source
edid	auto	[Enter]	The GHSW8242 implements the EDID of all connected displays and uses the best resolution for all display (default)
edid	default	[Enter]	IOGEAR's default EDID (720p) is passed to the video source

CEC Commands
Consumer Electronics Control (CEC) allows interconnected HDMI devices to communicate and respond to one remote control. The formula for CEC mode selection commands is as follows:

CEC Command + Control [Enter]

The following tables show the possible values and formats for the Control command:

Command	Description
cec	Enable CEC selection
Control	**Description**
off	Disable CEC
auto	Apply the video source's CEC to all display output
port 1	Apply the video source's CEC only to port 1 (default)

The following table shows the available command list:

Command	Control	Enter	Description
cec	off	[Enter]	CEC off
cec	auto	[Enter]	Connect the video source's CEC with all display output
cec	port 1	[Enter]	Apply the video source's CEC only to port 1 (default)

Power On Detection (POD)
The Power On Detection feature is turned on by default.
The formula for Power On Detection commands is as follows:

Power On Detection + Control command [Enter]

For example, to turn off the Power On Detection feature, input the following:
pod off [Enter]

The following tables show the possible values and formats for the **Control** command:

Command	Description
pod	Power On Detection command
Control	**Description**
on	Turn on (default)
off	Turn off

Note: Each command string can be separated with a space.

The following table shows the available command list:

Command	Control	Enter	Description
pod	on	[Enter]	POD enabled (default)
pod	off	[Enter]	POD disable

Verification
After entering a command, a verification message appears at the end of the command line as follows:

- Command OK - indicates that the command is correct and successfully performed by the switch
- Command incorrect - indicates that the command has the wrong format and/or values.

Powering Off and Restarting
If you power off the GHSW8242, follows these steps before powering it on again:
1. Power off the attached devices.
2. Unplug the power adapter cable from the GHSW8242.
3. Wait 10 seconds, and then plug the power adapter cable back in.
4. After the GHSW8242 is powered on, power on the attached devices.

OSD Menu

OSD Menu

Use the **MENU** pushbutton on the remote control to view the OSD menu and cycle through the options in the order shown in the table below. See IR Remote Control, page 7 for details on how to use the remote control.

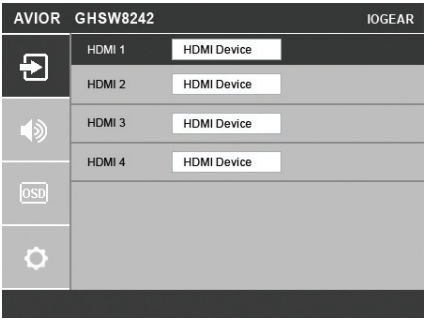
Menu	Sub-Menu page(s)	
Input Setting	HDMI 1	HDMI device / Blu-ray player / DVD player / Game Console / Set Top Box / Portable Device / PC
	HDMI 2	
	HDMI 3	
	HDMI 4	
Audio Setting	ARC	Disable / Enable
	Audio Channel	AUTO / Stereo / 5.1 Channel / 7.1 Channel
	HDMI Audio Output	On / Off
OSD Setting	Message Display Mode	Channel / Full / Off
	Transparency	0 ~ 100 (default is 75)
System Setting	EDID	Auto / Port 1 / Default
	CEC	Port 1 / Auto / Off
	Reset to Default	On / Off
	Version	Version Number

Note:

1. The highlighted texts indicate the GHSW8242's default setting.
2. The OSD function is disabled while 3D content is being displayed. Switch to 2D content or a different input port to enable the OSD.

Input Setting Menu

Use this screen to set the naming reference(s) of the video source device(s) for the HDMI input port(s).



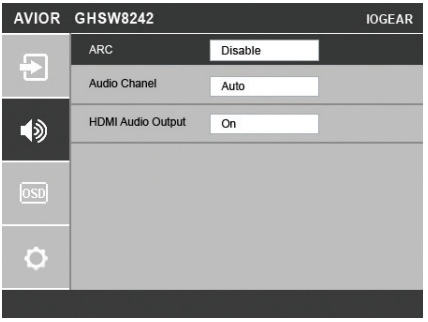
1. Use the drop-down menu to select a video source device for HDMI 1 input port. Options are as follows.

HDMI Device
Blu-ray Player
DVD Player
Game Console
Set Top Box
Portable Device
PC

2. Do the same for HDMI 2 ~ HDMI 4 input ports.

Audio Setting

Use this screen to configure the GHSW8242 audio settings.



1. Use the drop-down menu to Enable or Disable ARC on the GHSW8242.
   See Audio Return Channel (ARC), page 13 for more details on this feature.

Disable
Enable

2. Use the drop-down menu to select which audio channel receiver the GHSW8242 uses. The default value is Auto.

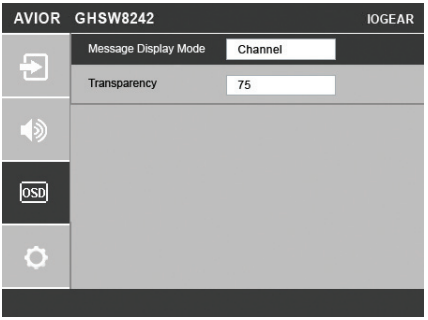
Auto
Stereo
5.1 Channel
7.1 Channel

3. Use the drop-down menu to turn on/off the audio coming from the HDMI output port(s). Select On to enable audio from the active HDMI output port, and select Off to disable it.

On
Off

OSD Setting

Use this screen to configure the GHSW8242 OSD settings.



1. Use the drop-down menu to select which display mode the GHSW8242 uses to display information in the upper left corner of the screen. Options are as follows.

Channel
Full
Off

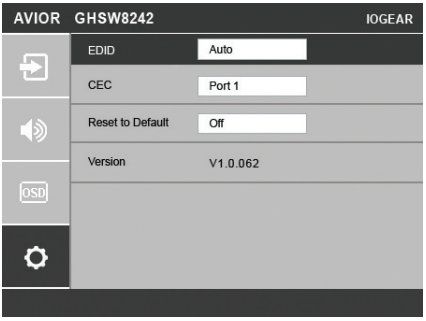
- Channel - This shows the source port number.
- Full - This shows the source port number and source type. See Input Setting Menu, page 24 for the list of source types.
- Off - There is no information shown.

2. Select the visibility of the OSD menu when it is invoked. Press the menu button to enter the adjustment menu. Press the up/down button to select increase/decrease the value then press the setup button to adjust. The value 100 shows a fully visible and opaque OSD menu. The default value is 75.

   Note: The Transparency value must be divisible by 5 (i.e., 5, 10, 15, 20...and so on).

System Setting

Use this screen to configure the GHSW8242 system settings.



1. Use the drop-down menu to set up which EDID mode the GHSW8242 uses. See EDID Commands, page 19 for more details.

Auto
Port 1
Default

2. Use the drop-down menu to select how the video source's CEC is applied. See CEC Commands, page 20 for more details.

Off
Auto
Port 1

3. Set this to On to have the GHSW8242 return to default settings when it is reset. Otherwise, select Off.

On
Off

4. This read-only field shows the firmware version of the GHSW8242.

Safety Instructions

General

- Read all of these instructions. Save them for future reference.
- Follow all warnings and instructions marked on the device.
- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- Do not use the device near water.
- Do not place the device near, or over, radiators or heat registers.
- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- Never spill liquid of any kind on the device.
- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- To prevent damage to your installation it is important that all devices are properly grounded.
- The device is equipped with a DC adapter. This is a safety feature.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or un-interruptible power supply (UPS).
- Position system cables and power cables carefully; Be sure that nothing rests on any cables.
- Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.
- Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.
- If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
  - Liquid has been spilled into the device.
  - The device has been exposed to rain or water
  - The device has been dropped, or the cabinet has been damaged.
  - The device exhibits a distinct change in performance, indicating a need for service.
  - The device does not operate normally when the operating instructions are followed.
- Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair

Rack Mounting & Grounding

Rack Mounting

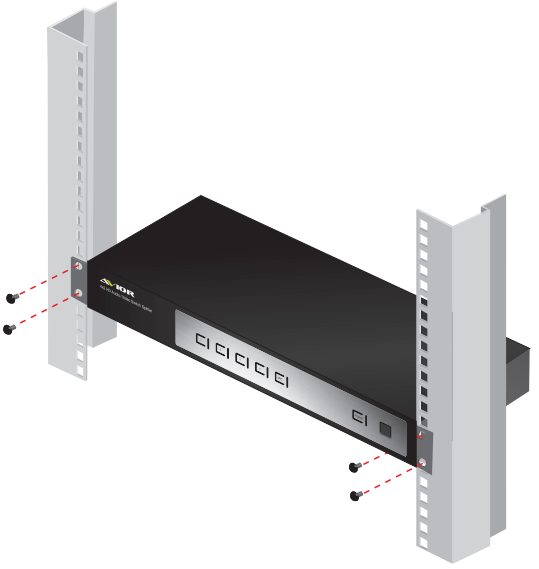
- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a device from the rack.
- Use caution when pressing the device rail release latches and sliding a device into or out of a rack; the slide rails can pinch your fingers.
- After a device is inserted into the rack, carefully extend the rail into a locking position, and then slide the device into the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Make sure that all equipment used on the rack – including power strips and other electrical connectors – is properly grounded.
- Ensure that proper airflow is provided to devices in the rack.
- Ensure that the operating ambient temperature of the rack environment does not exceed the maximum ambient temperature specified for the equipment by the manufacturer.
- Do not step on or stand on any device when servicing other devices in a rack.

For convenience and flexibility, the GHSW8242 can be mounted on system racks.
To rack mount a unit do the following:

1. Using the screws provided in the Rack Mount Kit, screw the mounting bracket into the side of the unit as show in the diagram below:

Notes:
1. Important safety information regarding the placement of this device is provided on page 21. Please review it before proceeding.
2. Make sure that the power to all devices connected to the installation are turned off.
3. Make sure that all devices you will be installing are properly grounded

2. Screw the bracket into any convenient location on the rack.
   Note: These screws are not provided. We recommend that you use M5 x 12 Phillips Type I cross, recessed type screws.



Grounding

To prevent damage to your installation it is important that all devices are properly grounded.

1. Use a grounding wire to ground the GHSW8242 by connecting one end of the wire to the grounding terminal, and the other end of the wire to a suitable grounded object.
2. Make sure that the computer(s)/device(s) that the GHSW8242 connects to are properly grounded.

Specifications

Function			GHSW8242
Display Connections			2
Connectors	Device	HDMI In	4 x HDMI Type A Female (Black)
	Display	HDMI Out	2 x HDMI Type A Female (Black)
	Optical Audio		1 x Toslink (Black)
	Coaxial Audio		1 x RCA (Orange)
	Stereo Audio		2 x RCA (Red / White)
	RS-232 Port		1 x DB-9 Female (Black)
	Power		1 x DC Jack
	IR Extension Port		1 x 3.5mm jack
Switches	Port Switch		4
	ARC		1
	Power Button		1
LEDs	Selected		4 (Green)
	ARC Selected		1 (Blue)
	Power		1 (Green / Orange)
IR Control			1
Video			HDTV resolutions of 480i, 480p, 720p, 1080i, 1080p (1920x1080); WUXGA (1920x1200)
Power Consumption			DC 5.3V, 6.95W
Environment	Operating Temp.		0 - 50°C
	Storage Temp.		-20 - 60°C
	Humidity		0 - 80% RH, Non-condensing
Physical Properties	Housing		Metal
	Weight		4.76lb (2.16Kg)
	Dimensions (L x W x H)		17.21” x 6.24” x 2.18” (43.72 x 15.86 x 5.54cm)

Limited Warranty

WE'RE HERE TO HELP YOU!
NEED ASSISTANCE SETTING UP THIS PRODUCT?

Make sure you:
1. Visit avior.iogear.com for more product information
2. Visit www.iogear.com/support for live help and product support

Warranty Information
This product carries a 3 Year Limited Warranty. For the terms and conditions of this warranty, please go to http://www.iogear.com/support/warranty

Register online at http://www.iogear.com/register

Important Product Information
Product Model_____
Serial Number_____

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected;
- Consult the dealer/an experienced radio/television technician for help.

RoHS
This product is RoHS compliant.

CE Compliance

This device has been tested and found to comply with the following European Union directives: Electromagnetic Capability (89/336/EMC), Low Voltage (73/23/EEC) and R&TTED (1999/5/EC).

SJ/T 11364-2006

The following contains information that relates to China.

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉（Cd）	六价 (Cr(VI))	多溴联苯（PBB）	多溴二苯醚（PBDE）
电器部件	●	○	○	○	○	○
机构部件	○	○	○	○	○	○

○:表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006规定的限量要求之下。

●:表示符合欧盟的豁免条款，但该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

x:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

Contact

IOGEAR

Toll Free 866-9-IOGEAR (USA)
Phone: 949-453-8782
19641 Da Vinci, Foothill Ranch, CA92610
www.iogear.com
support@iogear.com

About Us

FUN

IOGEAR offers connectivity solutions that are innovative, fun, and stylish, helping people enjoy daily life using our high technology products.

GREEN

IOGEAR is an environmentally conscious company that emphasizes the importance of conserving natural resources. The use of our technology solutions helps reduce electronic waste.

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