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SSW-HD-4A

4 input HDMI Swamesess Switcher with Real-time Multi-view Modes
Front Panel, RS-232, and IR Control
SPDIF Audio Output
Free Windows GUI

USER MANUAL

December 13, 2023



Important Safety Instructions



1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.



2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.



3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.



4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



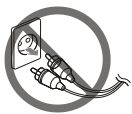
5. Do not place sources of naked flames, such as lighted candles, on the unit.



6. Clean this apparatus only with dry cloth.



7. Unplug this apparatus during lightning storms or when unused for long periods of time.



8. Protect the power cord from being walked on or pinched particularly at plugs.



9. Only use attachments / accessories specified by the manufacturer.



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Introduction

OVERVIEW

The SSW-HD-4 is a 4x1 HDMI seamless video switch with multi-view capabilities where all inputs can be shown in real-time (60 frames per second) on the output in a variety of modes. When only one input is shown, switching between different inputs is completely seamless (with zero delay transition). The switcher supports Input and Output resolutions up to 1080p Full HD.

The SSW can display four Hi-definition sources on a single display and comes with pre-configured multi-view layouts (4 equal images as shown here, or one large and 3 smaller windows in various positions).

Individual buttons for each input allow quick selection from the front panel. Control of switching and multi-view window layouts can be accessed via Front panel, IR remote control (included), RS-232, or a PC GUI (that controls the device via RS- 232).

The product is shipped with rack ears for 1U rack mounting.

Features

- Seamless Switching
- Pre-configured Multi-view Layouts
- Control via Front Panel, IR, PC-GUI and RS-232
- Input and Output Resolutions up to 1080p Full HD
- HDCP Compliant
- Includes IR Remote Control
- Includes Rack Mount Ears
- De-embedded S/PDIF audio out with RCA Connector
- Supports Locking HDMI Cables
- Includes Universal Power Supply w/ Locking DC Connector

Package Contents

1x SSW-HD-4 Seamless Switcher

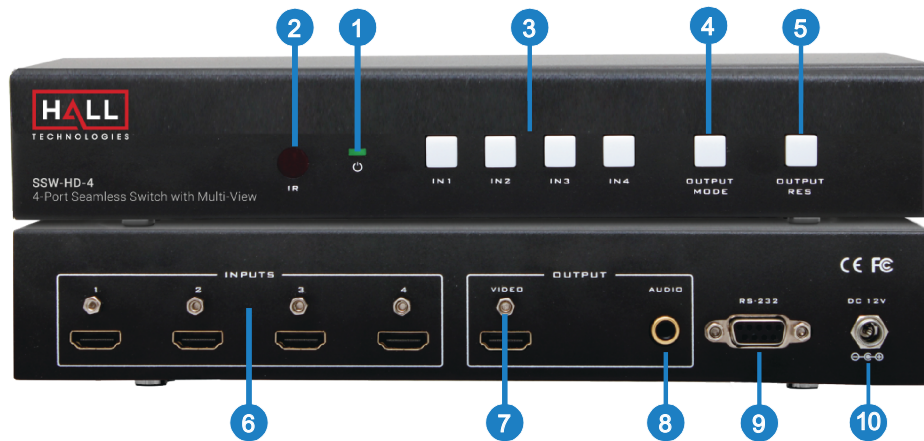
1x Locking 12V DC Universal Power Supply Qty (1) IR Remote Control

1x DB9 male-to-female RS232 cable

1x Rack mount ears

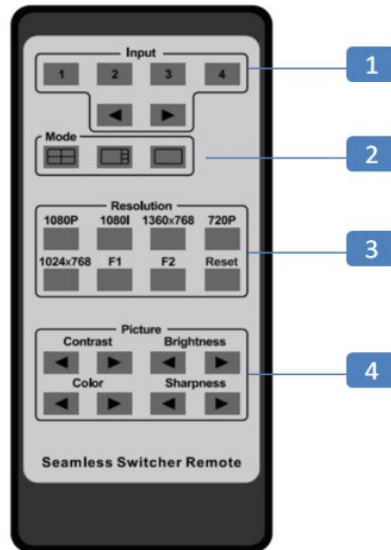
Product Description

SSW-HD-4



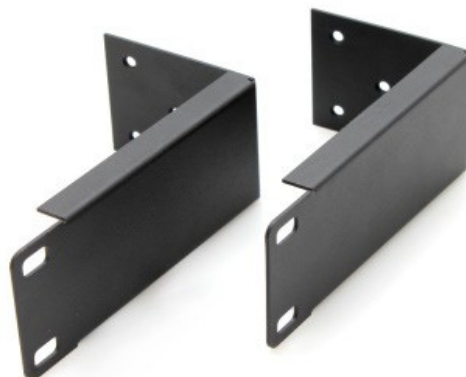
No.	Name	Description
1	Power	The green LED lights when SSW is powered.
2	IR	The IR detector receives signal from the included IR Hand held remote controller.
3	Input Buttons	Use this buttons to switch HDMI Inputs seamlessly. The active Input will be indicated with a back light RED LED.
4	Output Mode	Use this button to change the Multiview Layouts. By default, the SSW comes has 3 pre-defined layouts. Refer Multiview layouts for more information. Hold this button for 7 seconds to enable "Auto Scan" feature.
5	Output Resolution	Use this button to change the Output resolution to [780p 1080i 1024x768 1360x768 1080p] @60HZ. Hold this button to factory default the unit.
6	HDMI Inputs	Connect the HDMI video sources using HDMI cables. Use HR HDMI Locking cable for secure locking.
7	HDMI Outputs	Connect the HD Display using HDMI cable.
8	Audio Output	Use RCA connector to connect to audio devices.
9	RS-232	Connect the RS-232 port to the PC using RS-232 cable.
10	Power Supply	Plug the 12VDC power supply and connect the adapter to the AC Wall Outlet.

IR Remote Controller



1	Input	Use these buttons to select the Input. ◀ ▶ Use these buttons to quickly switch the inputs
2	Mode	Use these buttons to change the Multiview layout.
3	Resolution	Use these buttons to change the resolution of the output video. Supported Resolutions: 780p, 1080i, 1024x768, 1360x768, 1080p @ 60Hz.
4	Picture	Use these buttons to change the Contrast, Brightness, Color and Sharpness properties of the Output video. Note that the changes will affect all the four Inputs simultaneously. ◀ ▶ Use this buttons to change the Picture parameters.

If the SSW-HD-4 needs to be installed in a standard 19" rack, you can use the included rack ears.



Multi View Layouts

SSW supports three different Multiview modes. The Output modes can be configured using Front panel, IR Remote Controller PC-GUI and RS-232. When an input is selected in Multiview mode it is considered as a primary input and the other inputs dynamically arrange themselves in the layout as shown below. Note that Auto Scan can be enabled in Multiview mode.



Auto Scan (Auto Switch)

The Auto Scan feature is another important feature of the seamless switcher. When the Auto Scan feature is enabled, the SSW automatically switches to the latest input plugged. So even if currently selected input has video and you plug in a new input, it will switch to the new input.

In this mode, when the selected input is unplugged, the SSW automatically switches to another input with active video (scans from input 4 to input 1).

To enable Auto Scan, hold **Output Mode** button for 7 Seconds or until the button light starts blinking.

Auto Scan mode is disabled as soon as you switch the input manually. However, it remains active when changing the Output Mode or Output Resolution. Note that you can lock the front panel buttons using RS-232 commands.

Locking

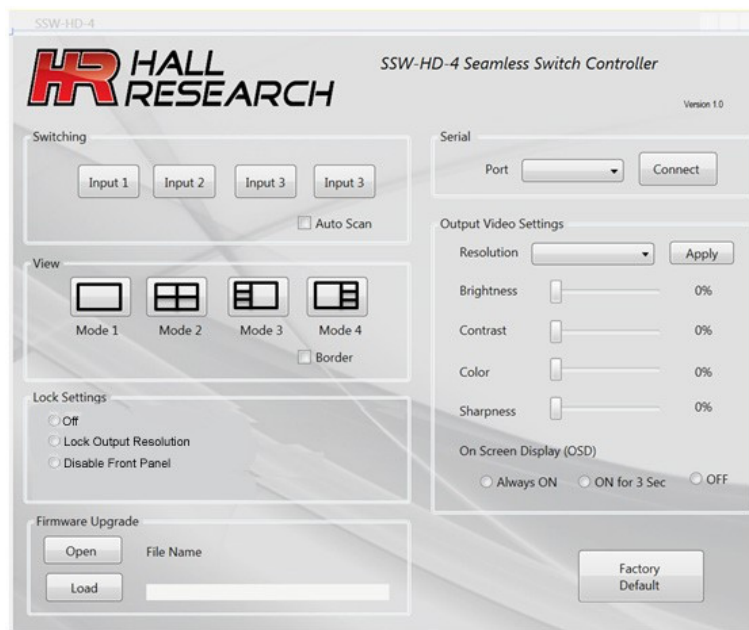
The Locking feature provides two modes to disable the front panel buttons partially or fully. The locking modes can be accessed using RS-232 or PC-GUI.

Factory Default

Factory default applies default setting to the unit. Factory default can be done from Front panel, RS-232 and PC-GUI. To do the Factory default from the front panel hold the **Output Resolution** button for 7 seconds or hold until you see all the inputs buttons blink once.

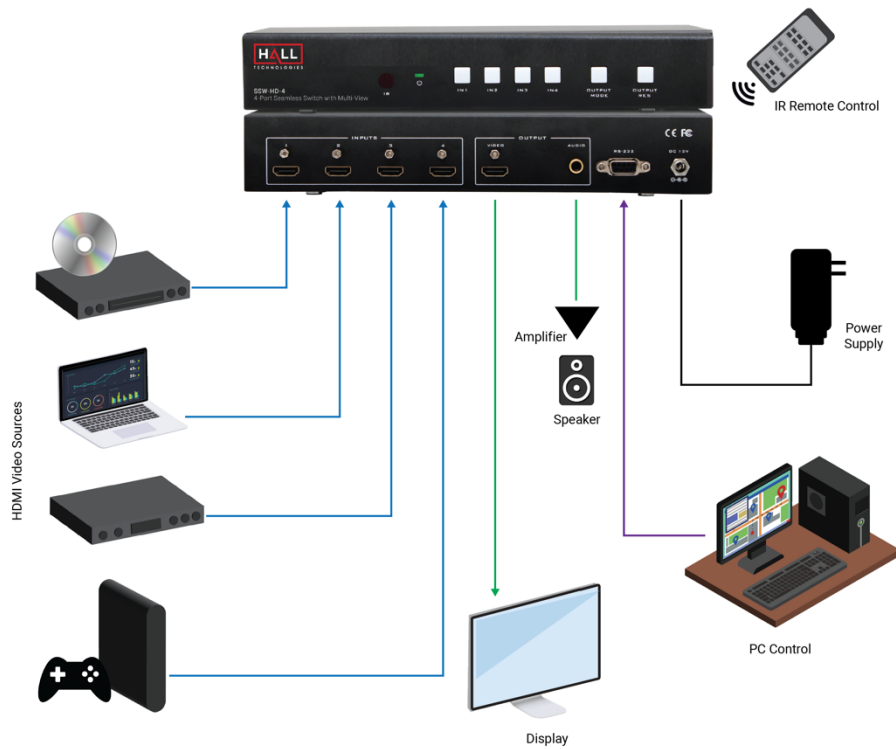
PC-GUI

The SSW-HD-4 can be controlled using a free PC GUI. The PC-GUI uses the RS-232 port on the device. Windows® GUI is available on the product's webpage.



Installation

1. Connect up to four HDMI Sources to the HDMI Input ports of SSW.
2. Connect an HD display to the HDMI Output port of SSW.
3. Optional: Connect an RS-232 Cable from the RS-232 port of SSW to the RS-232 connector of any RS-232 controller (PC).
4. Optional: Connect compatible audio devices using RCA cable to the SPDIF port.
5. Connect the included 12V DC Locking Power supply. Do not over tighten the locking power connector.
6. Connect the power supply to an available electrical outlet.



RS-232

The Serial port on the SSW is always active. When the changes are made from the front panel or using IR controller the corresponding Serial commands are sent over RS-232 as a response. This allows easy integration of SSW-HD-4 with 3rd party controllers.

Description	Setting
Baud Rate	19200
Data bits	8
Parity	None
Stop bits	1
Flow control	None

Serial Commands

Note that all the commands should be in upper case and should end with Carriage Return <CR>.

Command	Description	Response
S SOURCE n n = 0 to 4 Note: S SOURCE 0 E.g. S SOURCE 1	Selects the Primary HDMI Input. Blanks the Output . Selects the HDMI Input #1. (Default)	-No Response-
R SOURCE	Read the status of primary HDMI	SOURCE n
S OUTPUT n E.g. S OUTPUT 1	Set the Output resolution. n = 1 -- (1080p) (Default) n = 2 --(720p) n = 3 --(1080i) n = 4 --(1024x768) n = 5 -- (1360x768) Set the Output resolution to 1080p	-No Response-
R OUTPUT	Read the status of the Output resolution	OUTPUT 1
S MODE n n = 1 to 4 E.g. S MODE 2	Set the Multiview mode. n = 1 -- Mode 1 (Default) n = 2 -- Mode 2 n = 3 -- Mode 3 n = 4 -- Mode 4 Set Multiview Mode #2	-No Response-
R MODE	Read the status of the Multiview mode	MODE 2
S TILE n n=1 to 4	Set the position of the Input in multi view mode.	S TILE n
R TILE	Read the status of the Tile.	TILE n
S KEYLOCK n n = 0 to 2	Set the lock for the front panel. n= 0 -- Turn off the Lock. (Default) n= 1 -- Lock the Resolution. n= 2 -- Lock the Front Panel. Note: The Keylock feature only disables the front panel, and does not apply to IR Remote.	S KEYLOCK n
R KEYLOCK	Read the status of the key lock.	KEYLOCK n
S OSD n n=0 to 2	Set the OSD mode. n=0 --OSD OFF (Default) n=1 --Display OSD for 3 Seconds n=2 --Always ON	S OSD n
R OSD	Read the status of the OSD.	OSD n

S CONTRAST n n=0 to 100	Set the Contrast. n=50 (Default)	S CONTRAST n
R CONTRAST	Read the status of the contrast.	CONTRAST n
S BRIGHTNESS n n=0 to 100	Set the Brightness. n=50 (Default)	S BRIGHTNESS n
R BRIGHTNESS	Read the status of the brightness.	BRIGHTNESS n
S SATURATION n n=0 to 100	Set the Saturation. n=50 (Default)	S SATURATION n
R SATURATION	Read the status of the saturation.	SATURATION n
S SHARPNESS n n=0 to 100	Set the Sharpness. n=50 (Default)	S SHARPNESS n
R SHARPNESS	Read the Sharpness.	SHARPNESS n
S AUTOSCAN n n=0 to 1	Set the Auto scan. n=0 -- Disable the auto scan n=1 -- Enable the auto scan See Auto Scan_ for more information.	S AUTOSCAN n
R AUTOSCAN	Read the status of the Auto Scan.	AUTOSCAN n
S BORDER n n= 0 to 1	Enable or Disable the border n=0 -- Disable the border (Default) n=1 -- Enable the border.	S BORDER n
R BORDER	Read the status of the border.	BORDER n
S RESET 1	Reset the unit to factory default.	S RESET 1

Troubleshooting

There are no field serviceable parts or circuits in the device. Opening the unit will void the warranty.

Contacting Hall Technologies

If you determine that the SSW-HD-4 is malfunctioning, do not attempt to repair the unit instead, contact Hall Technologies Technical Support at 714-641-6607 or support@halltechnologies.com. Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description.

Shipping and Packaging

If you need to transport or ship your unit:

- Package it carefully. We recommend that you use the original container.
- Before you ship the units back to Hall Research for repair or return, contact us to get a Return Authorization (RMA) number.

Optional Accessories

For controlling the device from a PC you may need a USB to RS-232 adapter

- Compliant with the USB Specifications
- Supports RS-232 serial interface
- Supports up to 15200 kbps data transfer rate
- Supports Plug & Play specification
- USB host device drivers supplied

Specifications

Video	
Video Resolution	Output: 1080p@60Hz, 1080i@60Hz, 720p@60Hz, 1024x768@60Hz, 1360x768@60Hz Input: 480i@60Hz, 480p@60Hz, 576i@50Hz, 576p@50Hz, 720p@50/60Hz, 1080i@50/60Hz, 1080p@24/30/50/60Hz, 800x600@60Hz, 1024x768@60, 1280x720@60Hz, 1920x1080@60Hz
Video Bandwidth	Single-link to 165 MHz (4.95 Gbps)
Audio Standards	PCM [2/5.1/7.1]CH, Dolby Digital 2~5.1CH, DTS 2~5.1CH, Dolby True HD and DTS-HD Master Audio
Input Ports	4 x HDMI Female with Locking Capability 1 x RS-232
Output Ports	1 x HDMI Female with Locking Capability 1x S/PDIF audio out with RCA Connector
Power Supply	12 VDC @ 2.5A
Power Consumption	10W (Max)
ESD Protection	Human Body model: 8kV (air-gap discharge) 4kV (contact discharge)
Dimensions	9.85" (250mm) W x 4.65" (118mm) D x 1.25" (32mm) H
Weight	Product: 1.8 lbs (0.8 kg)
Enclosure	Metal
Operating Temperature	Storage: -4 to +140 °F (-20 to +60 °C) Operating: +32 to +122 °F (0 to +50 °C) 20% to 90% RH non-condensing



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