StretcherPro-HD

HDMI/DVI-D 2x2 Video Wall Controller

The ideal video wall controller and video matrix hardware solution with On Screen Display and stunning 4K resolution, no software required

Installation
Manual

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Table of Contents

What's in the Box?

PART NO.	QTY	DESCRIPTION
STRP-HDS	1	StretcherPro-HD: Expand any HDMI source among 4 HD screens in Multi-layout.
Power supply cord	1	(CCPWR06)
RS-232 Cable	1	RS-232 (male-to-female)
SRC-2A	1	IR Remote Control
SM-EYE	1	IR receiver

Technical Specifications

| VIDEO	
Video Bandwidth	Single-link 340MHz [10.2Gbps]
Resolution HDTV	480i,480p,720i,720p,1080i,1080p
PC Resolution	800 x 600 up to 1920 x 1200
Input Video Signal	1.2 volts
Input DDC Signal	5 volts
Single Link Range	1080p
Format	HDMI 1.4
DVI Compliance	Single-link DVI-D 2.0
Output Cable Length	Up to 20 ft.
HDCP Compliance	1.0/2.0
Video Bandwidth	Single-link 340MHz [10.2Gbps]
Input Interface	(1) HDMI
Output Interface	(4) HDMI
Connector	Type A [19-pin female]
CONTROL	
Front Panel	Tact Switches
RS-232	DB9 (female)
IR Remote Control	IR RC5
TCP/IP	Optional Ethernet Control
POWER	
Requirements	Internal 100-240 VAC
Power Supply Approvals	UL, CE, CSA, CEC, RoHS
MECHANICAL	
Height	1.70 in. (1U)
Width	17 in. (431.8 mm.)
Depth	10.2 in. (259 mm.)
Weight	4.05 lbs. (1.84 kg.)

Introduction

To create a four-screen video wall with four HD video inputs, the StretcherPro-HD Video Wall Controller provides a truly simple plug-and-play hardware solution with incredible 4K resolution. The StrecherPro-HD is HDCP compliant and is capable of stretching any HD source over four screens, while maintaining any resolution up to 1920 x 1080 on each screen. This powerful new version stretches the video image in multiple ways including: Video Wall mode, dual horizontal (2x1), dual vertical (1x2), or clone the image (1:1).

Features

- Stand-Alone Unit, Requiring no Additional Hardware or Software
- Plug-and-play ready
- 4 Screen Multilayout Digital Signage / Video Wall Controller
- Supports DVI-D Input with converters
- Learns any EDID
- Internal EDID database
- Multiple configurations
- Easy control and access
- HDCP and HDMI 1.4 compliant
- Supports IR and RS-232
- 4K2K/3840x2160 total (with 1920x1080 monitors)

Applications

- Corporate or Educational Presentations
- Airport Installations
- Wall Displays
- Digital Signage
- Dealer Rooms
- Control Rooms
- Shopping Centers
- Security
- Point-of-Sale
- Entertainment Venues
- Corporate Lobbies
- Restaurants

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HDMI Input
HDMI Output

DVD Player
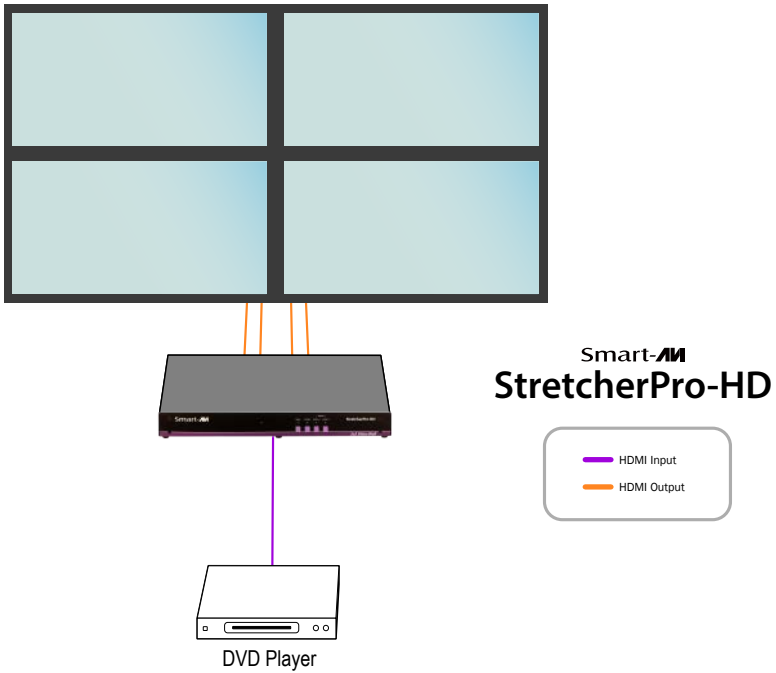
Hardware Installation

1. Turn off the StretcherPro-HD.
2. Connect the HDMI source (i.e. PC, Blu-Ray Player, Digital Signage, etc.) to the HDMI INPUT port of the StretcherPro-HD using HDMI cables.
3. Connect the (4) monitors to the (4) HDMI OUTPUT ports of the StretcherPro-HD using HDMI cables for HDMI monitors and TVs, or HDMI-to-DVI adapters for DVI displays.
4. Connect the IR receiver to the IR input jack at the back of the StretcherPro-HD.
5. Optionally connect an RS-232 cable from PC to the RS-232 port of the unit for additional control.
6. Turn on the StretcherPro-HD.
7. Wait for a few seconds for the unit to initialize.

Available Configurations

There are four different configurations or modes that are easy to navigate through with the StretcherPro-HD. Switching between the display modes is simple. The front panel buttons, IR remote control, OSD, RS-232 console command, and TCP/IP can be used to switch between modes.
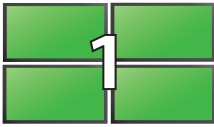
VIDEO WALL MODE: Users can project the input image across four HD screens (2x2 configuration). With screen resolution of 1920x1080, users can create a stunning 4K resolution video wall display.

CLONE MODE: Users can route the input image to each display individually, creating a simple and effective digital signage display.

DUAL HORIZONTAL: Users can route the input image over two horizontally arranged screens two times over, creating a unique and flexible horizontal display option.
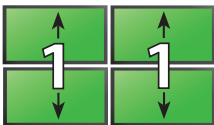
DUAL VERTICAL: Users can route the input image over two vertically arranged screens two times over, creating a unique and flexible vertical display option.

Control Using the Front Panel

Front Panel Buttons

- For Menu, press the DUAL H and DUAL V buttons simultaneously.

- To switch to Video Wall mode, press the WALL button.

- To switch to Clone mode, press the CLONE button.

- To switch to Dual Horizontal mode, press the DUAL H button.

- To switch to Dual Vertical mode, press the DUAL V button.

Control Using On Screen Display (OSD)

On Screen Display (OSD) gives users great flexibility and ease of use when looking to manage their video wall. It can be operated with the IR Remote Control and through the Front Panel Buttons.

IR Remote Control

The StretcherPro-HD will only respond to the remote control unit provided in the box. Below is the list of commands on how to control using the remote control:
DATA: Activates the OSD
Ch. DOWN: Navigate down through the options
Ch. Up: Navigate up through the options
Vol. +: Select
Vol. -: Back
ENTER: Enter the command
ESC: Exit OSD

OSD Control with Front Panel

To change modes with the OSD simply navigate using the following buttons on the front panel:
1: Down
2: Up
3: Back
4: Select
FULL: Enter

Simply scroll to the mode desired with the up or down button, select the mode, select the appropriate channel and enter.

Using RS-232 Control

The StretcherPro-HD may also be controlled via RS-232 commands. This feature requires an RS-232 card installed on your computer or a USB to RS-232 adapter. Below are instructions on how to properly create an RS-232 connection between a PC the StretcherPro-HD.

Establish a connection to StretcherPro-HD:

1. Connect a straight-through male-to-female RS-232 cable to the RS-232 connector on the PC.

2. Connect the other end of the cable to the RS-232 port of the StretcherPro-HD.

3. Power on the device.

CONNECTOR	PIN	NAME	DESCRIPTION
DB9 MALE - RECEIVE	2	RxD	Receive Data on DB9 Male
	3	TxD	Transmit Data on DB9 Male
	5	SGND	Ground
DB9 FEMALE - TRANSMIT	2	TxD	Transmit Data on DB9 Female
	3	RxD	Receive Data on DB9 Female
	5	SGND	Ground

Setting up the Terminal Application:

1. Run HyperTerminal on the PC (or use the terminal client of your choice).

2. Select the correct COM Port on the PC.

3. Use the following settings to create a connection to the device:
115200, 8, N, 1.(see settings on right).

4. Be sure that Flow Control is None.
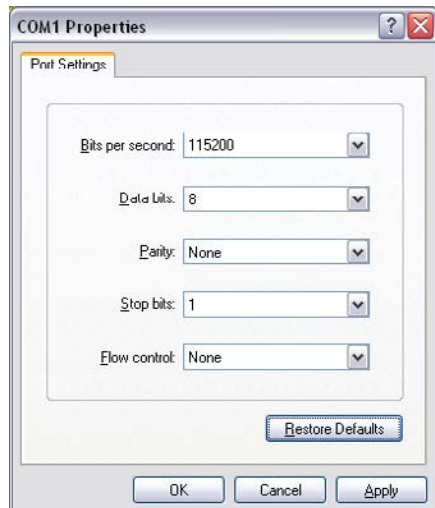
Using RS-232 Control (continued)

There are two primary modes of operation for StretcherPro-HD: Command Mode and CLI Mode. When connecting to the StretcherPro-HD via RS-232, it will start in Command Mode. CLI Mode is a more user- friendly way of operating the StretcherPro HD and includes instructional menus. The following section details the use of the CLI Mode.

When you connect to the StretcherPro-HD to a computer via an RS-232 connection, you will see the following screen on startup:

```
******StretcherPro-HD v.1.20.1*******
build date Mar  7 2014 10:53:44
…
…
StretcherPro-HD Initialization complete
```

CLI Mode: To enter CLI Mode type "clion" followed by the <enter> key and you will see the following prompt:
```
CLI enabled!
```

To display the StretcherPro-HD help menu type "?" then <enter> key
```
Stretcher HD v.1.00.1 CLI command list
====================================================================
i     List system information
f     Full
dh    Horizontal Dual
dv    Vertical Dual
v     VideoWall
o     Output o [ 1-1080P60 | 2-720P | 3-1080P30 ]
rEDID Read EDID
wEDID < 1-ACER P241w | 2-Gateway FHX2300 | 3-local monitor>
reset Reset HDMV
losd  load osd image
Frst  Factory reset
?     CLI command list
```

• To see the status of the input, press "i" then <enter> key.

• To read the EDID for an input, type in "rEDID" then <enter>.

• To program an EDID to the inputs, type in "wEDID N" then <enter>, where "N" is the EDID mode.
      Ex. "wEDID 3" is to learn the EDID of the local monitor

• To do a power reset on the StretcherPro-HD, type "reset" followed by <enter> key.

RS-232 Operation (continued)

MODE	CONSOLE COMMAND	DESCRIPTION & EXAMPLE
Video Wall Mode	//V<CR>	Stretch the input across four screens (2x2).
Clone Mode	//F<CR>	Clone the input into the four screens
Dual Horizontal	//DH<CR>	Stretch the input over two horizontally arranged two times over
Dual Vertical	//DV<CR>	Stretch the input over two vertically arranged two times over
Reset	//RESET<CR>	Resets the StretcherPro-HD box

<CR> is carriage return (0x0D). All commands sent from PC end with <CR> (or the <enter> key if using HyperTerminal).

Firmware Update

The firmware of the StretcherPro-HD can be upgraded by the end-user. Please contact info@smartavi.com for more details.

Below are instructions on how to upgrade the firmware of your StretcherPro-HD:

1. Power OFF the StretcherPro-HD.

2. Connect the RS-232 cable from computer to the RS-232 port of the StretcherPro-HD.

3. Download and install the chip45boot2 GUI:
   http://download.chip45.com/chip45boot2_GUI_V1.13.zip

4. Open the chip45boot2 GUI.

5. Click the Select Flash Hex file button and browse for the firmware file.

6. Power ON the StretcherPro-HD, then click the Connect to Bootloader button on the chip45boot2. The Status indicator on the lower right hand of the GUI should be green if the connection is successful. If not successful, click the Connect to Bootloader button again.

7. Click Program Flash to upload the hex file. When finished uploading, the Status indicator should say "Done".

8. Click Exit and open PuTTY or HyperTerminal and verify if you have successfully loaded the firmware.
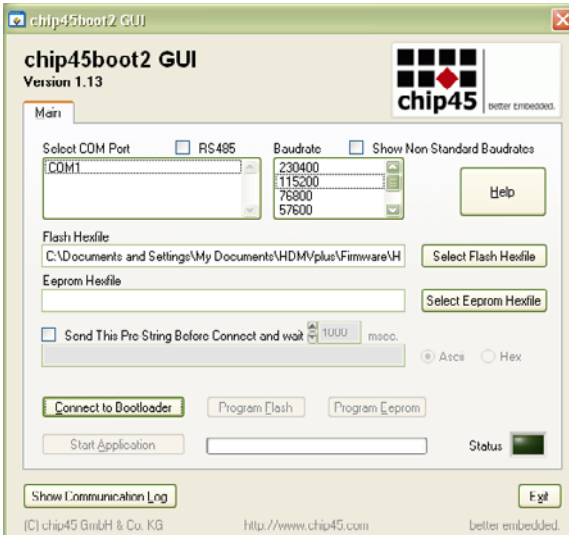
<u>Notes</u>

Limited Warranty Statement

A. Extent of limited warranty

1. SmartAVI Technologies, Inc. warrants to the end-user customers that the SmartAVI product specified above will be free from defects in materials and workmanship for the duration of 1 year, which duration begins on the date of purchase by the customer. Customer is responsible for maintaining proof of date of purchase.

2. SmartAVI limited warranty covers only those defects which arise as a result of normal use of the product, and do not apply to any:
   a. Improper or inadequate maintenance or modifications
   b. Operations outside product specifications
   c. Mechanical abuse and exposure to severe conditions

3. If SmartAVI receives, during applicable warranty period, a notice of defect, SmatAVI will at its discretion replace or repair defective product . If SmartAVI is unable to replace or repair defective product covered by the SmartAVI warranty within reasonable period of time, SmartAVI shall refund the cost of the product.

4. SmartAVI shall have no obligation to repair, replace or refund unit until customer returns defective product to SmartAVI.

5. Any replacement product could be new or like new, provided that it has functionality at least equal to that of the product being replaced.

6. SmartAVI limited warranty is valid in any country where the covered product is distributed by SmartAVI.

B. Limitations of warranty

TO THE EXTENT ALLOWED BY LOCAL LAW , NEITHER SMARTAVI NOR ITS THIRD PARTY SUPPLIERS MAKE ANY OTHER WARRANTY OR CONDITION OF ANY KIND WHETHER EXPRESSED OR IMPLIED , WITH RESPECT TO THE SMARTAVI PRODUCT , AND SPECIFICALLY DISCLAIM IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY , AND FITNESS FOR A PARTICULAR PURPOSE

C. Limitations of liability

To the extent allowed by local law the remedies provided in this warranty statement are the customers sole and exclusive remedies

TO THE EXTENT ALLOWED BY LOCAL LAW , EXCEPT FOR THE OBLIGATIONS SPECIFICALLY SET FORTH IN THIS WARRANTY STATEMENT , IN NO EVENT WILL SMARTAVI OR ITS THIRD PARTY SUPPLIERS BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHETHER BASED ON CONTRACT , TORT OR ANY OTHER LEGAL THEORY AND WHETHER ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

D. Local Law

To the extent that this warranty statement is inconsistent with local law, this warranty statement shall be considered modified to be consistent with such law.

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Designed and Manufactured in the USA

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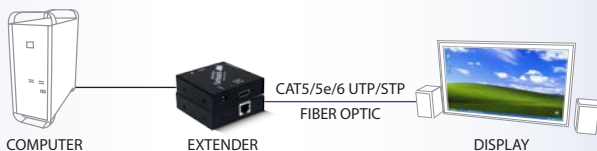***11651 Vanowen St. North Hollywood, CA 91605***
SmartAVI.com

Many industry-leading companies have recognized the innovation and power of SmartAVI's technologies and have successfully implemented them within their systems. Users of SmartAVI technology include:

At SmartAVI, we offer a complete line of audio/video solutions for high-quality signal switching and distribution. Our devices support multiple signal types including VGA, DVI, HDMI, USB, RS232, IR and more.

EXTENDERS

COMPUTER   EXTENDER   DISPLAY

CAT5/5e/6 UTP/STP
FIBER OPTIC

SPLITTERS

BLUERAY PLAYER   SPLITTER

DISPLAYS

SWITCHES

DVR

GAMING CONSOLE

MATRIX SWITCH

DISPLAYS

At SmartAVI, we offer high-quality products including digital signage, video walls, signal extenders, splitters and switches and fiber optics. All of our products are manufactured in the United States in our North Hollywood, California facility.

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