MXWall

Multi-Format Video Wall Processor

32x32 HD Video Wall Controller
HDMI, VGA, Composite, S-Video and Y/Pb/Pr Inputs
Integrated USB Media Player

Installation &
User Guide

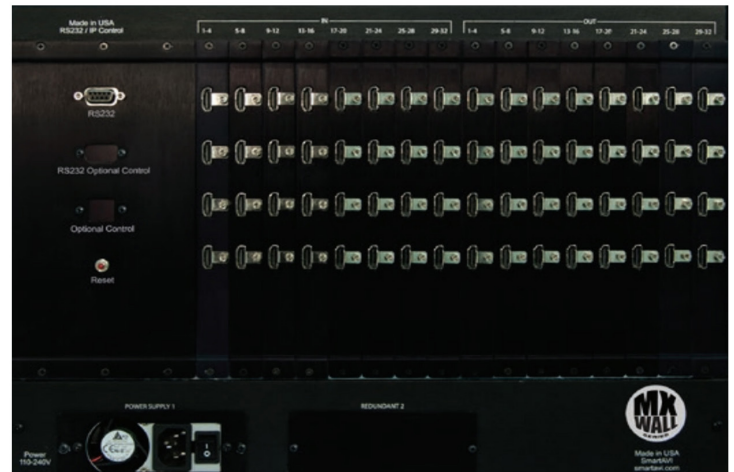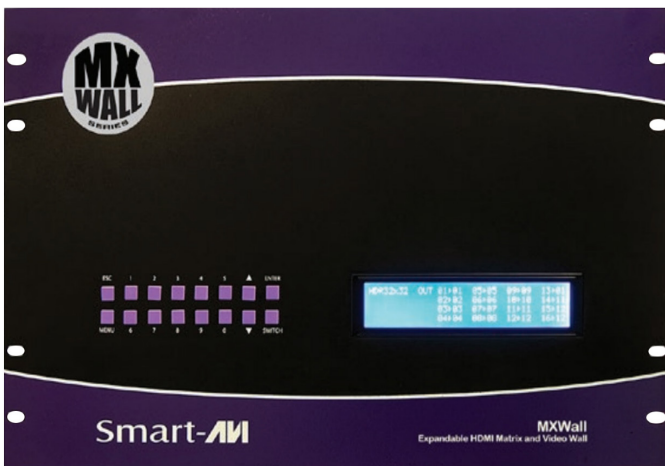**Smart-AVI**
SMART AUDIO VIDEO INNOVATION

Made in the U.S.A.

Table of Contents

What's in the Box?

PART NO.	QTY	DESCRIPTION
MXWALL-32x32-S	1	MXWall: 32x32 Video Wall Controller.
Power supply cord	1	(CCPWR06)
Manual	1	User Guide

Technical Specifications

VIDEO	
Video Amplifier Bandwidth	3.2G
Input Video Signal	Video (TMDS) 0.5~1.0Vpp
Input DDC Signal	5 volts
Compliances	HDMI 1.4 and HDCP
Pixel Rates	Clock frequency beyond 165Mpix/second
Format	4:4:4 and 4:2:2 data input formats
Resolution	480p, 720p, 1080i, 1080p
Input Card Format	HDMI
Output Card Format	DVI
Input Slots	Up to 8 cards of 4 HDMI input each
Output Slots	Up to 8 cards of 4 DVI output each
Video Type	RGB/YCBCR : 24/30/36-bits,YCBCR: 8/10/12/16/20/24-bits
CONTROLS	
Front	2x8 keyboard with 4x40 LCD
RS-232	9600bps, Software flow DB9 Female
TCP/IP	Webserver, Telnet
OTHER	
Working Temperature	0°C~+55°C
Storage Humidity	10%~90%
Weight	30 lbs.
Dimensions	17.125 in (W) x 12 in (H) x 12 in (D)
Power Supply	50/60Hz, 100~230 VAC
Consumption	300W

Introduction

Thank you for choosing SmartAVI's MXWall for your ideal video wall solution. The MXWall offers top-notch HD DVI output for six different type of signal inputs. Create striking 32x32 dynamic wall displays easily with simple signal-switching and flexible connectivity. The MXWall even features a fully-integrated USB media player, perfect for populating your displays with enticing digital content.

Capable of expanding any one HD signal to four large-scale screens at 1080p (1920x1080 @ 60Hz), the MXWall showcases stunning picture quality and SmartAVI products' signature ease of use. In this guide, you will learn how to install and optimize your experience with MXWall using basic steps. We will cover setting the hardware up, activating and connecting your systems, and offer helpful tips on how to best use MXWall's excellent selection of picture modes to enhance your video wall.

Congratulations again on choosing MXWall and SmartAVI as your go-to video wall solution!
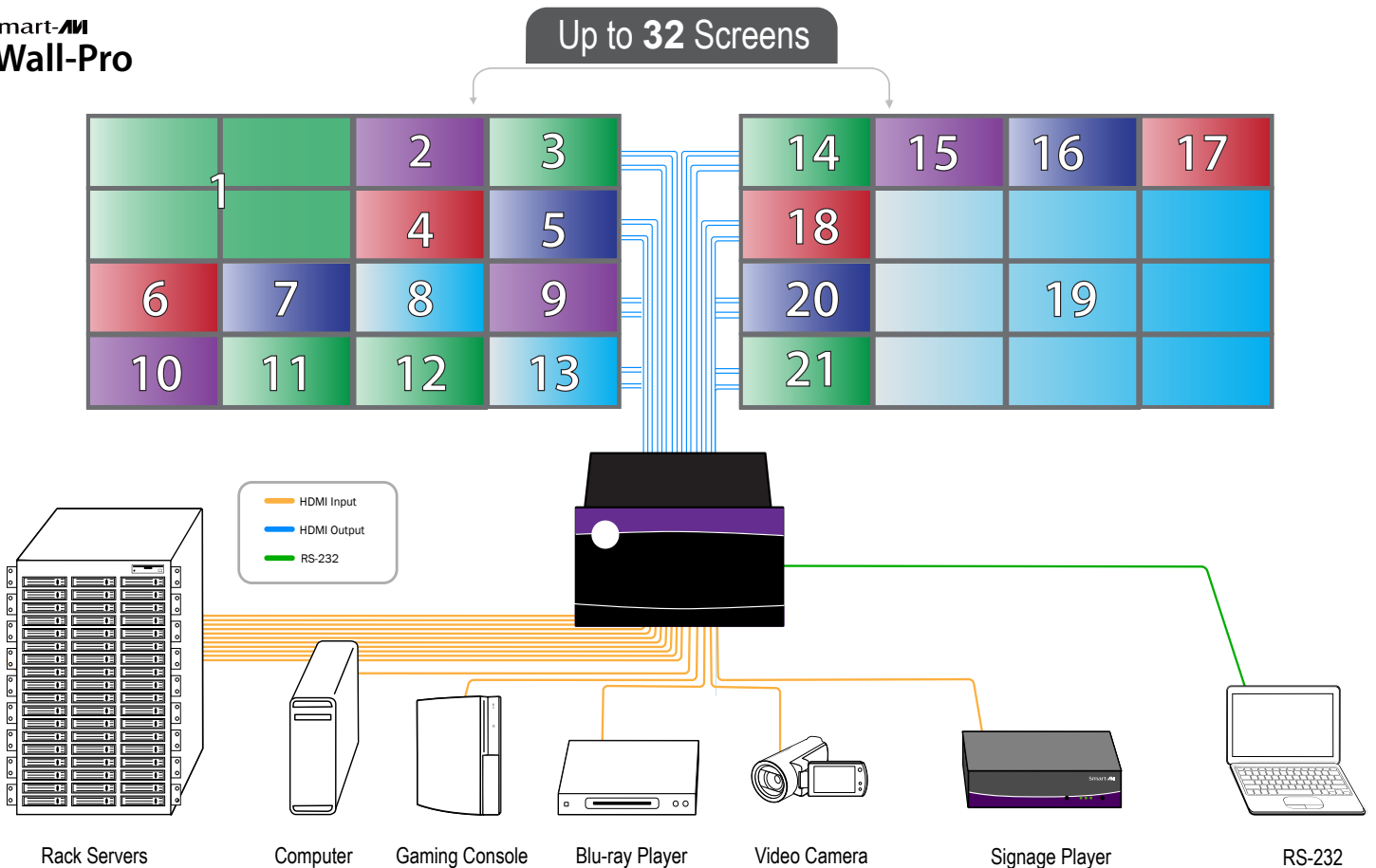
Features

- Four screen (32x32) multi-Layout, multi-format video wall controller
- Outputs: (32) DVI single-link
- Inputs: (32) HDMI
- Integrated USB Media Player (for digital video, imagery, audio) and port
- Internal EDID learning
- 1080p (1920x1080 @ 60Hz) HD resolution output
- No additional hardware or software required
- Supports TCP/IP, IR, and RS232 control
- HDCP and HDMI 1.4 compliant
- Easy to set-up
- Easy to use

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
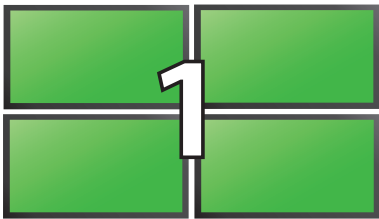- Restaurants

Operational Diagram

Hardware Installation

1. Position MXWall conveniently and keep it unplugged.
2. Connect DVI output cables between the MXWall and your video wall screens
3. Connect any input to their corresponding signal source (Blu-Ray player, computer, etc)
4. Connect the IR receiver to the IR input jack at the back of the MXWall.
5. Optionally connect an RS-232 cable from PC to the RS-232 port of the unit for additional control.
6. Optionally connect an Ethernet cable from web router to the MXWall for additional control over the internet (TCP/IP)
7. Turn on the MXWall.
8. 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 MXWall. Switching between the display modes is simple. Front panel buttons, the IR remote control, on-screen-display, RS-232, and TCP/IP can be used to switch between modes at will.

VIDEO WALL MODE: Users can project the input image across four HD screens (32x32 configuration). With screen resolution of 1920x1080, users can create a stunning 1080p resolution video wall display.

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

QUAD MODE: Split each individual screen into four proportional sections, each displaying one of any 32 input signals. Perfect for attractive and varied content.

PIP MODE: Users can populate individual screens with multiple signal sources. Add any of the 32 input signals to play alongside others within a single display monitor for dynamic and intricate visual presentations.

Control Using the Front Panel

Front Panel Buttons

- For Menu, press the PIP and WIN buttons simultaneously.

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

To switch to Individual mode, press the INDV button.

- To switch to Quad mode, press the QUAD button.

- To switch to PIP mode, press the PIP button.

- To switch to Windowed mode, press the WIN button.

Notes:

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 MXWall 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 MXWall 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 MXWall.
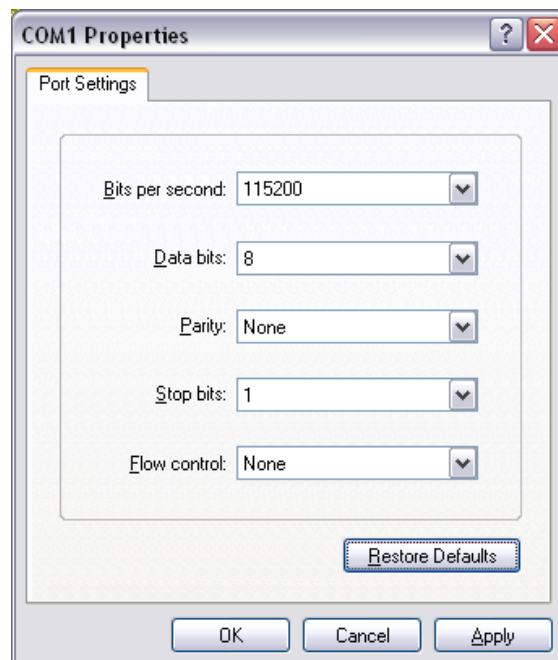
Establish a connection to MXWall:

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 MXWall.

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.

COM1 Properties — Port Settings

Bits per second: 115200
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None

Restore Defaults
OK   Cancel   Apply

Using RS-232 Control (continued)

There are two primary modes of operation for MXWall: Command Mode and CLI Mode. When connecting to the MXWall 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 MXWall to a computer via an RS-232 connection, you will see the following screen on startup:

```
******MXWall v.1.20.1*******
build date Mar  7 2014 10:53:44
…
…
MXWall 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 MXWall 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 MXWall, type "reset" followed by <enter> key.

RS-232 Operation (continued)

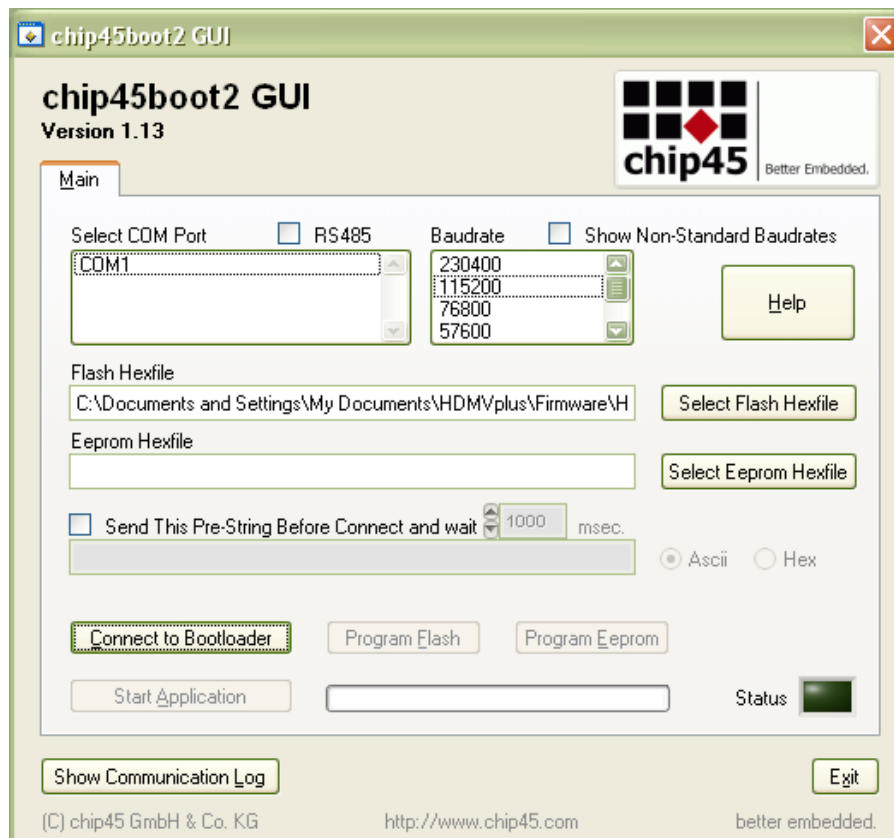| MODE	CONSOLE COMMAND	DESCRIPTION & EXAMPLE
Video Wall Mode	//V<CR>	Stretch the input across four screens (32x32).
Clone Mode	//F<CR>	Clone the input into the four screens
Dual Horizontal	//DH<CR>	Stretch the input over two horizontally arranged two times over
Dual Vertical	//DV<CR>	Stretch the input over two vertically arranged two times over

<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 MXWall 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 MXWall:

1. Power OFF the MXWall.

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

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 MXWall, 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.

Notes

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.

Designed and Manufactured in the USA

800.AVI.2131
Tel: (818) 503-6200 Fax: (818) 503-6208
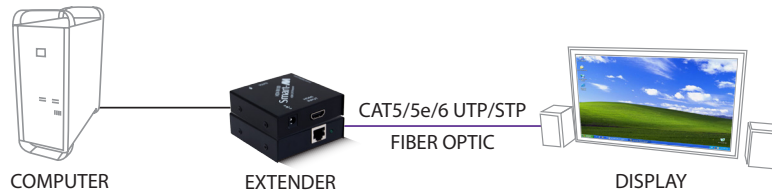**11651 Vanowen St. North Hollywood, CA 91605**
SmartAVI.com

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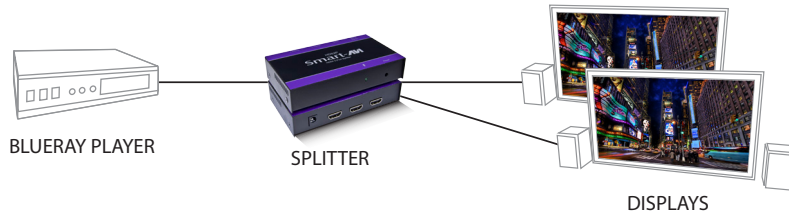
At SmartAVI, we offer a complete line of audio/video solutions for high-quality signal switching and distribution. Our devices support multiple signal types including VGA, DVI, HDMI, USB, RS232, IR and more.
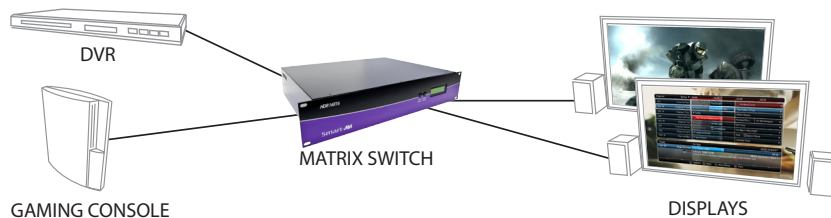
EXTENDERS

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.

NOTICE

The information contained in this document is subject to change without notice. SmartAVI makes no warranty of any kind with regard to this material, including but not limited to, implied warranties of merchantability and fitness for any particular purpose. SmartAVI will not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance or use of this material. No part of this document may be photocopied, reproduced or translated into another language without prior written consent from SmartAVI. For more information, visit www.smartavi.com.
© Copyright 2014 SmartAVI, All Rights Reserved

SmartAVI, Inc. / Twitter: smartavi - 11651 Vanowen St. North Hollywood, CA 91605
Tel: (818) 503-6200 Fax: (818) 574-5581 - http://www.SmartAVI.com

Smart-AVI
SMART AUDIO VIDEO INNOVATION

Made in the U.S.A.

www.smartavi.com   1-800-AVI-2131