

Smart-AM

SMART AUDIO VIDEO INNOVATION

HDR8x8 LP



8-port HDMI Matrix Switch
with Front Panel, RS-232, and TCP/IP Control

USER MANUAL

WHAT'S IN THE BOX?

PART NO.	QTY.	DESCRIPTION
HDR8X8LPS	1	HDMI 8x8 Router: Includes: [HDR8X8Plus, (SM-CSW) & (CCPWR06)]
User Manual	1	

TABLE OF CONTENTS

INTRODUCTION & FEATURES	3
TECHNICAL SPECIFICATIONS	4
APPLICATIONS	5
HARDWARE INSTALLATION	6
FRONT PANEL CONTROL	7
RS-232 WITH SMARTCONTROLPRO SOFTWARE	9
RS-232 CONTROL (w/ THIRD PARTY SOFTWARE)	12
USING THE TCP/IP CONTROL MODULE (OPTIONAL)	13
LIMITED WARRANTY STATEMENT	14

INTRODUCTION

SmartAVI's non-blocking DVR16X16 digital video matrix switch provides an easy and dynamic approach to switching the DVI output from up to 16 computers, to up to 16 displays. The matrix configuration provides maximum flexibility, allowing switching between any digital video source and/or display. The DVR 16x16 provides digital video output up to 30 feet and at resolutions up to 1920 x 1200. The switching can be controlled directly via the front panel, or remotely using RS-232 commands, IR, or TCP/IP (optional). The DVR16X16 is controlled by Windows®-based software that is easy to understand and simple to use – a cornerstone of all SmartAVI products.

FEATURES

- Sources can be routed independently to displays
- Switching controlled via the front panel, RS-232, and optional Internet control
- Supports high definition video resolutions of 480p, 720p, 1080i, and 1080p
- Supports 7.1 Digital Surround Sound Audio
- HDCP and HDMI 1.4 compliant
- Supports EDID for total control of compliant displays
- Delivers uncompressed digital video with zero signal loss
- Outputs HDMI up to 40 feet
- Rack Mountable

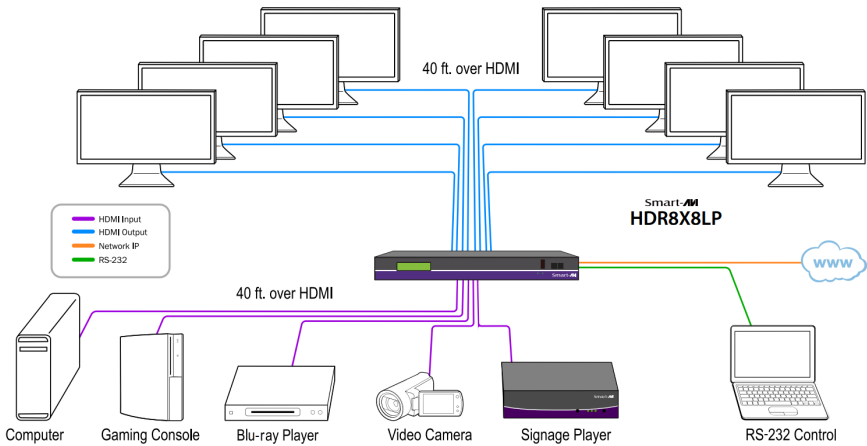
TECHNICAL SPECIFICATIONS

VIDEO	
Format	DVI-D Single Link
TMDS Clock	24 MHz - 225 MHz
Input Interface	(8) HDMI-A
Output Interface	(8) HDMI-A
Max Resolution	1600x1200 @ 60 Hz, 1920x1200 @ 60 Hz, 1080p
DDC	5 volts p-p (TTL)
Input Equalization	Automatic
Input Cable Length	Up to 40 ft.
Output Cable Length	Up to 40 ft.

OTHER	
Warranty	Limited 1 Year Parts and Labor
Control	Front Panel, RS-232, and TCP/IP (optional)
Power	Internal 100-240 VAC
Dimensions	19"W x 1.75"H (2U) x 7"D
Weight	10 lbs.
HDR8x8LP Approvals	FCC, CE, RoHS Compliant
Power Supply Approvals	UL, CE, CSA, CEC, RoHS

ENVIRONMENTAL	
Operating Temperature	0 to +40° C (+32° to 104° F)
Operating Humidity	10% to 85% (Non-condensing)
Storage Temperature	-20° to +60° (+20° to +140° F)
Storage Humidity	10% to 85% (Non-condensing)

APPLICATION DIAGRAM



APPLICATIONS

- Wall Displays
- Digital Signage
- Airports
- Dealer Rooms
- Control Rooms
- Audio/Visual Presentations
- Shopping Centers
- Security
- Point-of-Sale
- Hotels/Resorts
- KVM Switch

HARDWARE INSTALLATION

1. Turn off all the computers and displays.
2. Connect the HDMI cables from the input devices to the HDMI *input* ports on the rear of the HDR8x8LP.
3. Connect the HDMI monitors or displays to the *output* ports on the on the rear of the HDR8x8LP using HDMI cables.
4. Connect the power cord and power-on the HDR8x8LP.
5. Power on the computers and the displays.
6. If the HDR8x8LP is controlled via RS-232, connect a straight through male-to-female RS-232 cable to the RS-232 port on the on the rear of the unit.



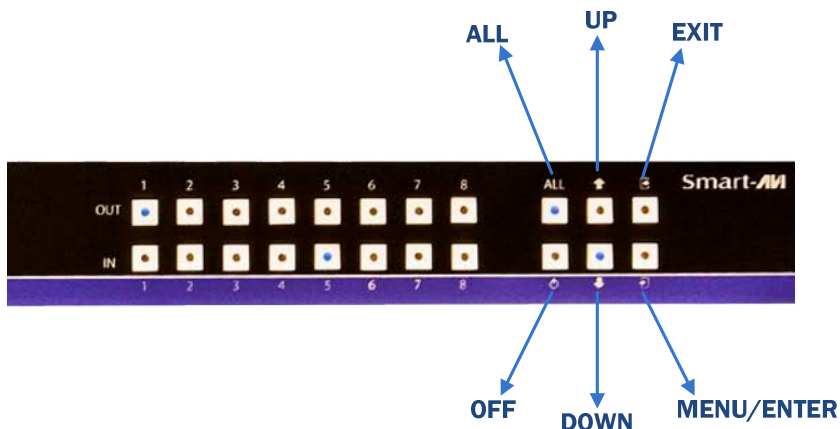
HDR8X8LP Front



HDR8X8LP Back

FRONT PANEL CONTROL

The SmartAVI HDR8x8LP can be controlled from the front panel via keypad and LCD, allowing users to see which inputs are connected to which outputs.



Switching Inputs to any Outputs via Front-Panel keys

- To go to Switching Mode, press the *Menu* key and select the “Channel Switch” option.
- Press an input key, and then press the desired output keys to route this input to those outputs.
- When an input key is pressed, the key LED blinks. This indicates that that it is ready to be routed to an output.
- The LCD display changes as the cross-point is assigned.
- To broadcast an input to all outputs, first press the input, then press the *ALL* key.
- To disable an output, press the *OFF* button and select the output.
- To disable all, press the *OFF* key followed by *ALL* key.

Storing and Recalling a Macro

Macros are user-definable configurations that store a set sequence of routes. Up to 8 macros can be stored in the HDR8x8LP

To store a macro:

- From the menu, select “Store Macro”.
- Select a number from 1 to 8 to save the macro.
- The current matrix configuration will be saved.

To recall a macro:

- From the menu, select “Recall Macro”.
- Select a number from 1 to 8 to recall the macro.

EDID Learning

The EDID is a data structure transmitted by the display that enables the HDR8x8LP to detect or identify the characteristics of the monitors connected to its outputs. The HDR8x8 “learns” and stores the EDID to its memory to make reconnection to the display effortless.

Users have the option to learn the EDID from one output to any of the inputs or to learn the default EDID, which is compatible with most HD displays.

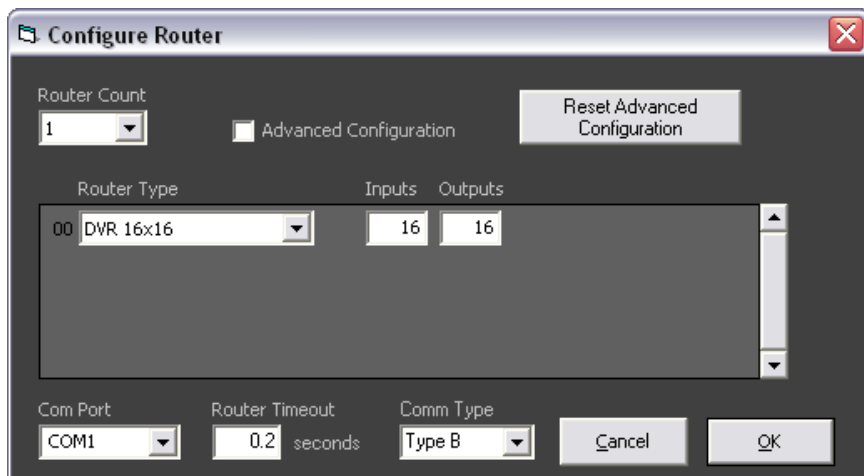
To learn the EDID:

- Press the *Menu* key and select the “EDID copy” option.
- Press the *MENU/ENTER* key and select an input (or select the “ALL” program all inputs).
- Then select the output from which the EDID will be learned. “Def” option is for the default EDID.

RS-232 CONTROL WITH SMARTCONTROLPRO SOFTWARE

The SmartControlPro program is a full-featured router controller for most SmartAVI devices. Some of its features are:

- Easy, intuitive user interface
- Multiple router support
- Macros to automate repetitive routes



When the software starts you will see the configuration window.

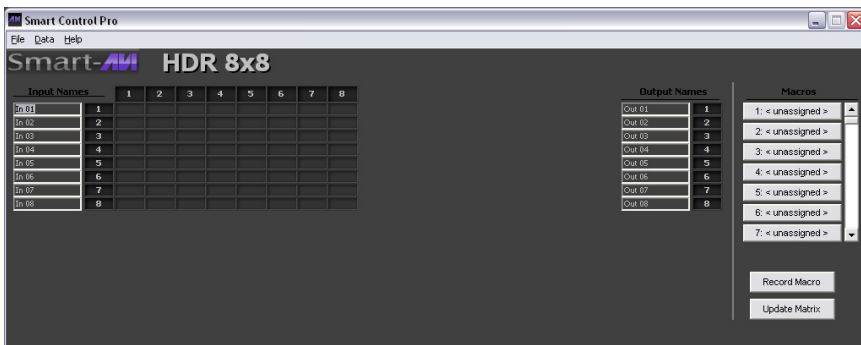
- Select the COM port number where the RS-232 is plugged in.
- Choose “HDR8x8” for *Router Type*.
- Click “OK”.

After clicking OK, you will then be working with the main Matrix View.

Main Routing Window

The Main Routing Window enables you to control the router connections by means of the cross-point panel, the button panel, or with the pre-recorded routes called macros.

Cross-point Panel: Simply click on the cross point itself. The input on the left will then be routed to the output above.



Note: Inputs can be routed to several different outputs, but each output can only have a single input at any one time. So you can have several connections horizontally but not vertically.

The Button Panel: To broadcast all outputs to an input, hold the CTRL key down and click on an input.

Macros: This section of the window is used to save and play black macros. Macros store a set sequence of routes.



To record a macro:

- a. Click on the *Record* button. Select *Manual Save*. A blinking “Recording” message below this button will be displayed to indicate that all routes are being recorded.
- b. Select the desired cross-points. There is no limit on the number of routes you may record.
- c. If you click a macro button while in the record mode, the macro will be executed, and these routes will be added to the recording. This makes it possible to combine the routes of two or more macros into one bigger macro.
- d. When finished, click the *Save Macro* button. You will be instructed to then click on one of the macro buttons. Then, you will be prompted to write a name for this button. This will save the recorded routes to that button. To cancel saving the macro, click the *Cancel Save* button.
- e. To play back a macro, simply click on one of the 50 macro buttons. Use the scroll bar to bring any of these into view.
- f. The macros are automatically saved in the current configuration file. They are also saved when you select the File > Save Configuration menu.

To change the input and output names, simply click on the box next to the input/output number (located under the *Input Names* or *Output Names*) and change the text.



The *Update Matrix* button allows you to update the configuration on the main routing window based on the actual current settings on the router.

USING RS-232 CONTROL (THIRD-PARTY SOFTWARE)

How to properly create an RS-232 connection between a PC and HDR8x8LP.

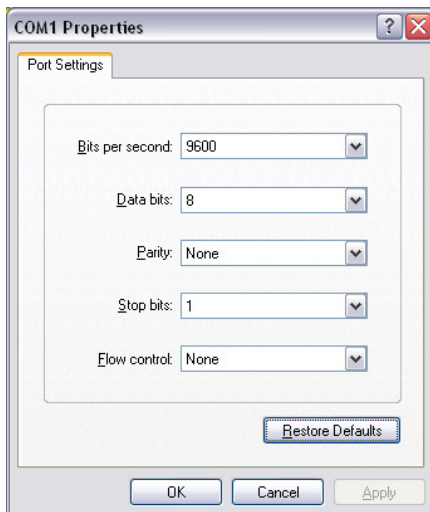
Establish a connection to HDR8X8LP:

1. Connect a straight through male-to-female RS-232 cable (not included) to the RS-232 connector on the PC.
2. Connect the other end of the cable to the RS-232 port of the HDR8x8LP
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:

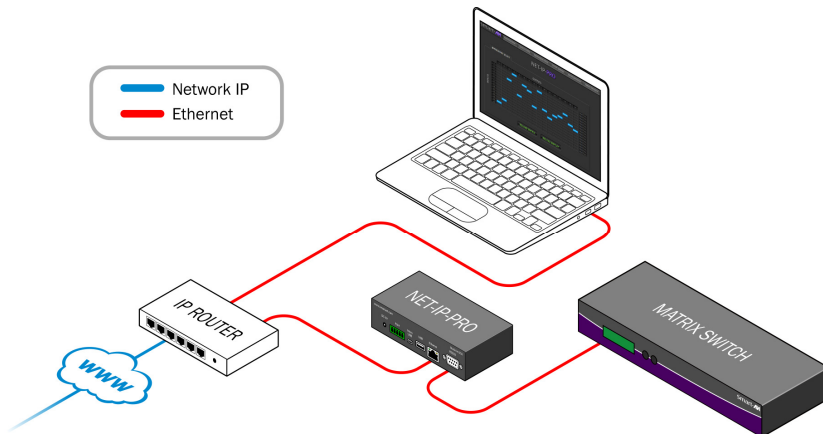
1. Open Hyperterminal on the PC. (or use the terminal client of your choice)
2. Use the default settings to create a connection to the device: **9600, 8, N, 1.** (see settings on right).
3. Be sure that Flow Control is *None*.
4. The output of the device will be the same as the PC.



For more information about the RS-232 Command Protocol, visit www.smartavi.com.

TCP/IP CONTROL (OPTIONAL)

The NET-IP-PRO is an RS-232 control module that allows most SmartAVI switching matrixes to be controlled remotely via HTTP or TELNET. Manage the switching functions of your matrix with ease from anywhere in the world. With NET-IP-PRO you can save input/output configuration presets for easy access. TELNET access provides transparent command control of your matrix, perfect for use with automated third-party control software.



For more information about the NET-IP-PRO, visit www.smartavi.com.

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, SmartAVI 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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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:





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