

Smart-AM

SMART AUDIO VIDEO INNOVATION

HDR-Ultra



HDMI 16x16 Matrix over Cat 5e/6

USER MANUAL

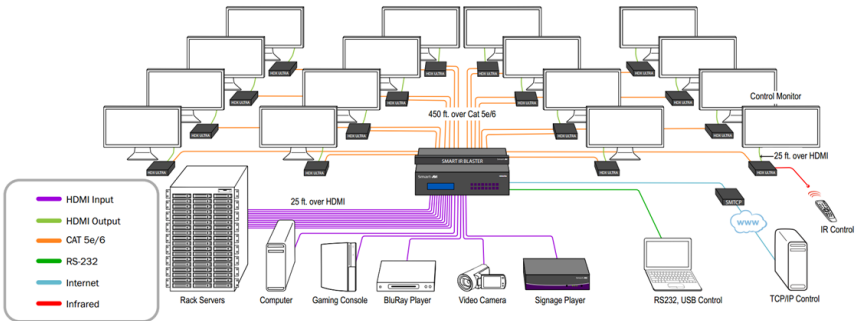
WHAT'S IN THE BOX?

PART NO.	QTY.	DESCRIPTION
HDR-UltraS	1	
User Manual	1	

TABLE OF CONTENTS

INTRODUCTION	3
APPLICATION DIAGRAM / HARDWARE INSTALLATION	4
FRONT LED INDICATORS	5
FRONT PANEL CONTROL	5
USING RS-232 COMMANDS	6
SMARTCONTROLPRO SOFTWARE	8
USING THE TCP/IP CONTROL MODULE (OPTIONAL)	10
LIMITED WARRANTY STATEMENT	11

INTRODUCTION

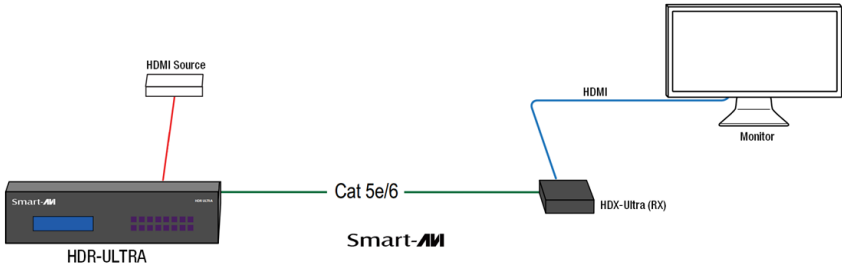


The HDR-ULTRA is a High Definition video router that enables users to route HD signals up to 425 feet over CAT 5e/6 cables, providing the ultimate solution to create clean and efficient video and digital signage systems in configurations up to 16x16.

Pristine high definition video has become the standard for entertainment, video systems and digital signage, but HD video routing has been confined by the necessity of short, bulky and unsightly cables. The HDR-ULTRA, utilizing HDBaseT technology, breaks the distance limits that have tethered users as it facilitates the routing of crystal clear 1080p HD video, multi-channel audio, Ethernet, IR and power up to an incredible 425 feet through the use of inexpensive CAT 5e/6 cables. With unprecedented flexibility and convenience, the HDR-ULTRA is overhauling the old challenges of HD Matrix routers with an elegant and easy-to-install solution.

The HDR-ULTRA can direct as many as 16 HD inputs and 16 HD outputs effortlessly. Routing HD signals across long distances from the user-friendly HDR-ULTRA exponentially increases users' ability to create the ideal digital video and audio experience in any environment.

APPLICATION DIAGRAM



HARDWARE INSTALLATION

1. Turn off all input devices and displays.
2. Connect the HDMI cables from the input devices and to the “IN” ports on the HDR-ULTRA matrix.
3. Connect the HDMI cables from the HDMI port of the HDX-Ultra Receivers to the HDMI displays.
4. Connect the RJ-45 port of each HDX-Ultra Receivers to the respective “OUT” ports on the HDR-ULTRA using CAT5e/6 cables.
5. Power on the HDX-Ultra Receivers by plugging in their power adapters (5VDC2A).
6. Connect the power cord and power-on the HDR-ULTRA.
7. Power on the input devices and the displays.

CONTROLLING THE HDR-ULTRA

There are multiple ways to control the HDR-Ultra:

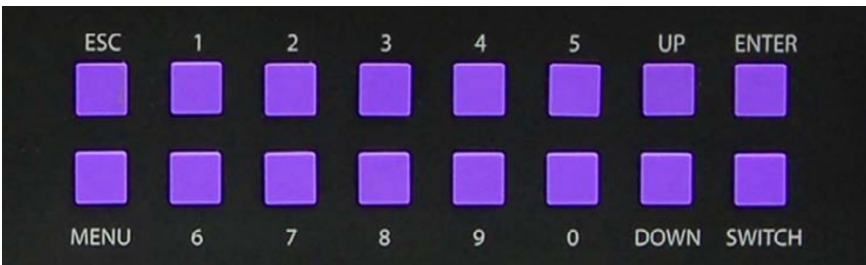
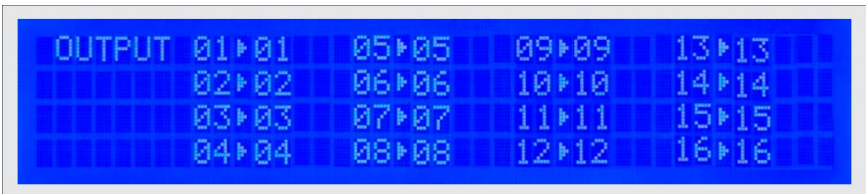
- Front panel
- SmartControl software
- RS-232 commands
- TCP-IP module (NET-IP-Pro)

FRONT PANEL CONTROL

The HDR-ULTRA Front panel enables one to switch directly from the Matrix without the use of any software.

Its LCD (40x4) offers detailed information about the status of the switch at any given moment.

To assign an output to an input, press SWITCH. A blinking block cursor will appear. Use UP and DOWN to select the input that you would like to assign. Once the cursor is over the desired input port, press ENTER to enter editing mode. Press UP and DOWN to select the output port. Once you have selected an output, press ENTER to save the configuration. To escape from editing mode, press ESC.



USING RS-232 COMMANDS

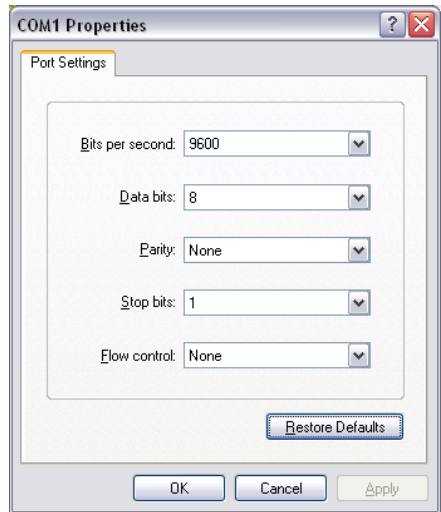
How to properly create an RS-232 connection between a PC and HDR-Ultra.

Establish a connection to HDR-Ultra:

1. Connect a straight-through, male-to-female RS-232 cable from the computer to the RS-232 port of the HDR-Ultra.
2. Power on the device.

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.

Command Modes:

There are two primary modes of operation for the RS-232 control of the HDR-ULTRA: Command Mode and Debug Mode.

Command Mode: When connecting to the HDR-ULTRA via RS-232, it will start in Command Mode, in which raw commands are allowed to be sent matrix to control its various functions without the use of a menu or prompt. This mode is intended for advanced control or third-party control hardware.

Debug mode is a more user-friendly way of operating the HDR-ULTRA and it also includes instructional menus. To enter the Debug Mode, type in “d on” followed by <ENTER>.

Below are the Debug Mode Menu Items:

```
=====
Command Line Interface Help:
d      Enable/Disable debug      d [on][off]
sw     Switch Port               sw [output] 1-16 [input] 1-16
br     Broadcast Port            br [input | / | \] 1-16
om     Set output mode           om [output] [mode# (0-2) | ?]
o      Enable/Disable Output     o [output] [0 = disable | 1 = enable]
to     Toggle Output Enables     to
q      Query Crosspoints
h      Toggle Hotplug            h [input]
olev   Set Output level          olev [output | ? | r | a] [level (1-10)]
edid   Manage EDID
reset  Restore Factory Settings
boot   Reboot matrix
info   Display matrix info
help   Command list
?
=====
```

Learning the EDID of the Monitor Using Debug Mode

1. Connect CAT5e/6 cable from one of the HDX-Ultra Receivers to the OUT1 of the HDR-ULTRA.
2. Connect a straight-through male-to-female RS-232 cable from the computer to the RS-232 port of the HDR-ULTRA.
3. Run HyperTerminal on your PC (or use the terminal client of your choice).
4. Cycle the power of the HDMI (reset) and you should see the following on the screen:

```
SmartAVI HDMI 16X16 ver 12.06.11#1
```

5. To enter the **Debug Mode** type “d on” and hit ENTER. You will see the following prompt:

```
DBG>
```

6. Type in “edid” and hit ENTER to go to **Manage EDID**:

```
EDID>
```

7. Type in “learn” and hit ENTER to learn the monitor plugged in **port 1**:

```
EDID> learn
```

```
Successfully learned EDID!
```

Note: EDID learning is also available using front-panel selection.

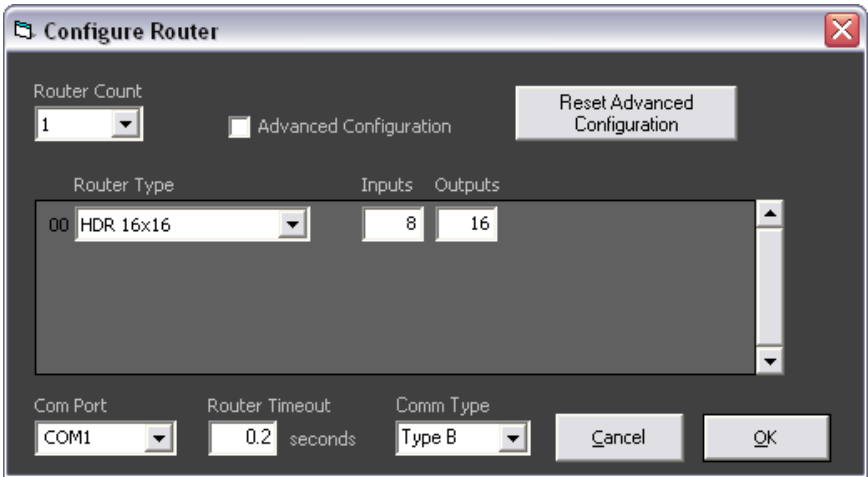
RS-232 CONTROL with SMARTCONTROLPRO SOFTWARE

Connect the HDR-Ultra to a host computer using RS-232 connection.

Start the SmartControlPro Software.

When the software starts, you will see the configuration window.

- Select the COM port number where the RS-232 is plugged in.



- Choose “HDR 16x16” for *Router Type* and type in the correct numbers of the Inputs and Outputs.
- 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.

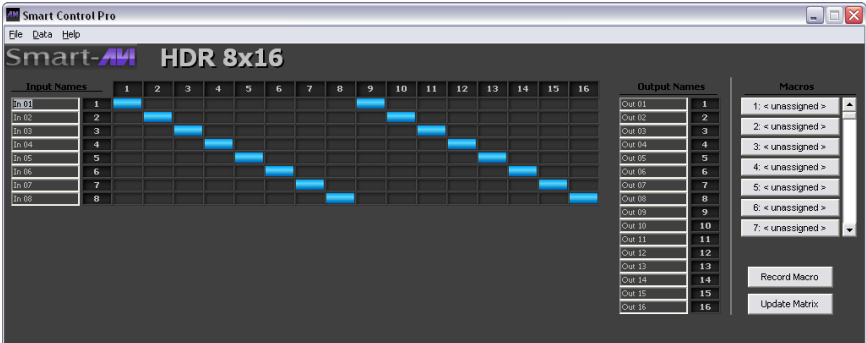
Cross-point Panel: Simply click on the cross point itself. The input on the left will then be routed to the output above.



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.

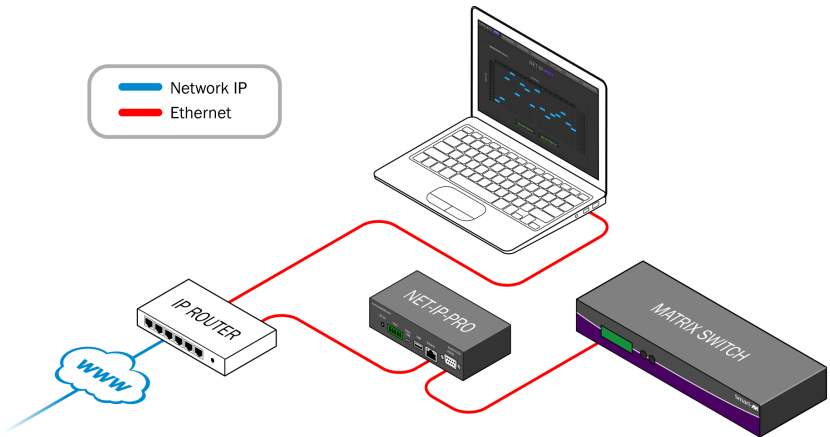
The Button Panel: To broadcast all outputs to an input, hold the CTRL key and click on an input.

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



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.



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SMART AUDIO VIDEO INNOVATION

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