

UHDN-4P

User Manual

4-Port Ultra 4K-60Hz HDMI KVM Switch with USB 2.0 and Audio



Manage 4 computers from a single workstation

Smart-*AVI*
SMART AUDIO VIDEO INNOVATION

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WHAT'S IN THE BOX?

PART NO.	QTY	DESCRIPTION
UHDN-4P-S	1	4-Port Ultra 4K-60Hz HDMI KVM Switch
PS5VD4A	1	Power Adapter
	1	Quick Start Guide

Brackets for mounting this device in a standard 19" rack can be ordered from SmartAVI.



Figure 2-1

INTRODUCTION

The UHDN-4P is a dedicated multi-platform KVM switch capable of managing four 4K computers through a single KVM. Built with ultra-HD ready HDMI outputs, the UHDN-4P offers full 4K emulation at 60Hz directly from the device. Until now, HDMI switches lost emulated picture when disconnected from monitors, leading to confusion and disorganization upon reconnecting. With the UHDN-4P, full EDID-assisted HDMI video emulation ensures visual workspaces and screen resolutions are remembered every time.

The UHDN-4P is HDCP compliant, supporting screen resolutions up to 4K Ultra-HD (3840x2160 @ 60Hz) with responsive EDID emulation. Additionally, the UHDN-4P is compatible with any USB peripheral. The UHDN-4P is also easy to control with both a simple front-panel interface, as well as RS-232 or hot-keys.

SOURCE SWITCHING MADE EASY

The UHDN-4P offers simplified management between four HDMI equipped computers' USB 2.0 outputs. Keyboards, mice, and other connected USB devices can be switched between with ease. This dynamic KVM switch can be controlled via hot keys or RS-232 commands, as well as directly through the console's easy-to-read front panel.

EDID PASS-THROUGH AND RECOGNITION

The UHDN-4P features EDID Pass-Through technology and source recognition, which enables smooth and efficient switching in virtually any scenario. This plug-and-play EDID functionality makes set up hassle free and simple.

FULL USB KEYBOARD AND MOUSE EMULATION

The USB keyboard and mouse emulation utilized by UHDN-4P provides quick source switching via keyboard hot keys. UHDN-4P simulates the presence of a keyboard and mouse for every attached computer. This essential function simulates keyboard and mouse control for all connected computers, so switching between each is kept seamless and completely uninterrupted.

FEATURES

- Supports up to Ultra-HD 4K (3840x2160) @ 30/50/60Hz.
- Supports 3D.
- Supports LPCM, Dolby-AC3, DTS7.1, and DSD/Dolby TrueHD/DTS-HD master audio.
- Supports HDMI 1.3, 1.4, & 2.0.
- HDMI and HDCP compliant.
- Control up to four dual head computers with a single KVM.
- Full EDID HDMI video emulation.
- Zero pixel loss with TMDS signal correction.
- Supports USB Keyboard-Mouse emulation.
- Supports all USB 2.0 devices.
- Optionally rack mountable.
- Hot key commands for quick channel selection.
- Independent (asynchronous) switching of KVM and peripheral USB ports. Users can scan a document and save in another computer.
- Complete KVM emulation for error free booting.
- Easy switching via front-panel, RS-232 or hot keys.
- Full HDMI support, backwards compatibility.

TECHNICAL SPECIFICATIONS

VIDEO	
Link Rate	5.4 Gbps/lane
Input Interface	(4) HDMI (female) Version 2.0
Output Interface	(1) HDMI (female) Version 2.0
Resolution	480i to 4Kx2K @ 60Hz (YUV420)
Input Equalization	Automatic
Video Bandwidth	300 MHz, 10.2 Gbps
HDCP Compliant	Yes
Input/Output Max Cable Length	20 ft (depending on cable quality)
AUDIO	
Input Interface	(4) 3.5mm stereo audio jack
Output Interface	(1) 3.5mm stereo audio jack
Frequency Response	20Hz ~ 20KHz
Common Mode	Rejection @ 60dB
Nominal Level	0.0 to 1.0 V
CONTROL	
Front Panel	Buttons (SELECT audio/video source)
RS-232	DB9 Female, 9600 bps, N, 8 1, No flow control
Hot Keys	Via Keyboard
Emulation	Keyboard, Video and Mouse
USB	
Signal Type	USB 2.0, 1.1, and 1.0 w/ internal hub
Input Interface	(4) USB Type B (female)
Device Input Interface	(2) USB 1.1 Type A (female) for keyboard-mouse (2) USB 2.0 Type A Transparent
OTHER	
Power	External 100-240 VAC/ 5VDC4A
Dimensions	2" H x 5.75" D x 12.75" W
Weight	3.55 lbs
Approvals	UL, CE, ROHS Compliant
Operating Temp.	23 to 95 °F (-5 to 35 °C)
Storage Temp.	-4 to 185 °F (-20 to 85 °C)
Humidity	5 to 90% (No Condensation)

HARDWARE INSTALLATION

1. Ensure that power is disconnected from the UHDN-4P.
2. Connect the HDMI cables and USB cables (male-A to male-B) from the computers to the respective ports on the UHDN-4P.
3. Optionally connect audio cables from the computers to the respective ports on the UHDN-4P.
4. Optionally connect RS-232 for control functions.
5. Connect the USB keyboard and mouse to the two USB ports with keyboard and mouse symbols.
6. Optionally connect speakers to the UHDN-4P.
7. Optionally connect up to 2 USB peripheral devices such as printers or flash drives.
8. Connect the display monitor to the OUTPUT connector on the UHDN-4P.
9. Power on the UHDN-4P.

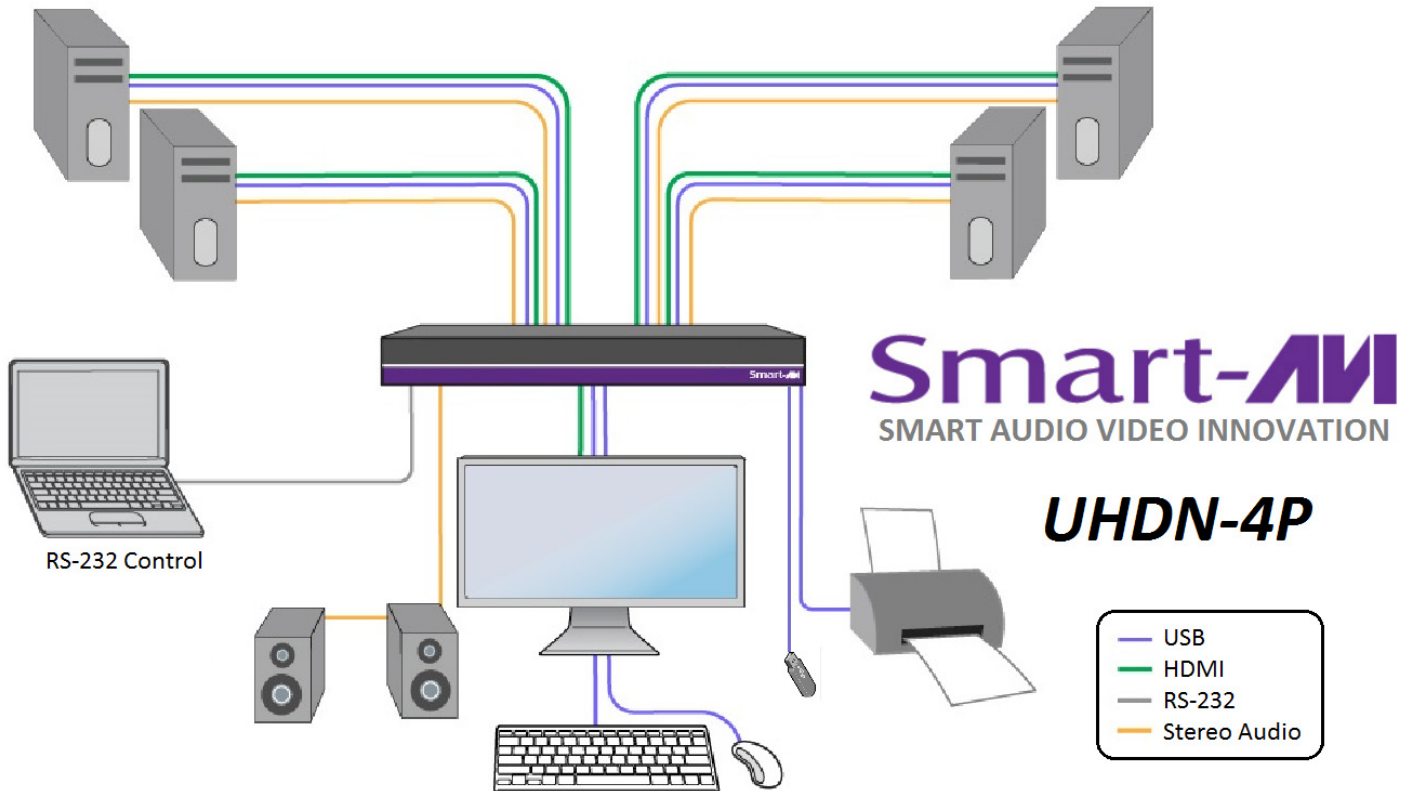


Figure 5-1



Figure 5-2

FRONT PANEL CONTROL

To switch ports using the front panel, press the M1 or M2 button to navigate between connected computers. EDID learning is also done through the front panel buttons by pressing both buttons simultaneously.



Figure 6-1

HOTKEY COMMANDS

The Hotkey command is a keyboard sequence used to trigger an action on the UHDN-4P through the use of the keyboard connected on the USB port of the UHDN-4P. To activate the hotkey sequence, press the CTRL key twice and then enter the desired hotkey commands. See Table 6-2.

COMMANDS	HOTKEYS	RS-232 CONTROL
Switch all devices (KVM, USB 2.0, and Audio)	[CTRL] [CTRL] m [port #] [ENTER]	//m [port #] [ENTER]
Switch KVM only	[CTRL] [CTRL] c [port #] [ENTER]	//c [port #] [ENTER]
Switch Audio only	[CTRL] [CTRL] a [port #] [ENTER]	//a [port #] [ENTER]
Switch USB 2.0 only	[CTRL] [CTRL] u [port #] [ENTER]	//u [port #] [ENTER]
EDID Learning	[CTRL] [CTRL] e [ENTER]	//e [ENTER]
Same as front panel ◀ M1 button	[CTRL] [CTRL] ↑	n/a
Same as front panel M2 ▶ button	[CTRL] [CTRL] ↓	n/a
Reset	[CTRL] [CTRL] r	//r
Factory Default Reset	[CTRL] [CTRL] f	//f

Table 6-2

RS-232 CONTROL

Controlling the UHDN-4P via RS-232 requires an RS-232 card installed on your computer or a USB to RS-232 adapter. Check the UHDN-4P and your Computer to determine if you need a male to male or a male to female cable and how long it needs to be. The UHDN-4P requires a straight through cable. You can use a Null Modem Adapter to convert a crossed cable to a straight through cable. An example of a straight through cable is shown in Figure 7-1. The standard maximum length for an RS-232 cable is 50 feet. Call our Smart-AVI Support Engineer if you require more information.

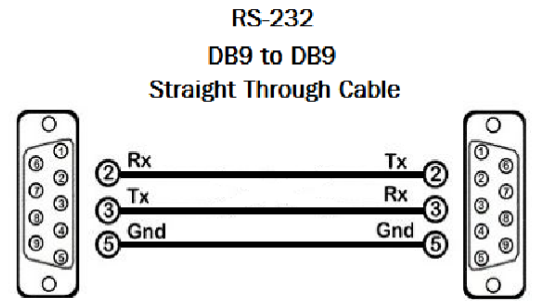


Figure 7-1

You will need to identify the COM port number used. On a Windows PC:

1. Click on the start button.
2. Click on Control Panel.
3. Click on Device Manager.
4. Click on the arrow next to Ports (COM & LPT).

You should see the COM port number in use. See Figure 7-2

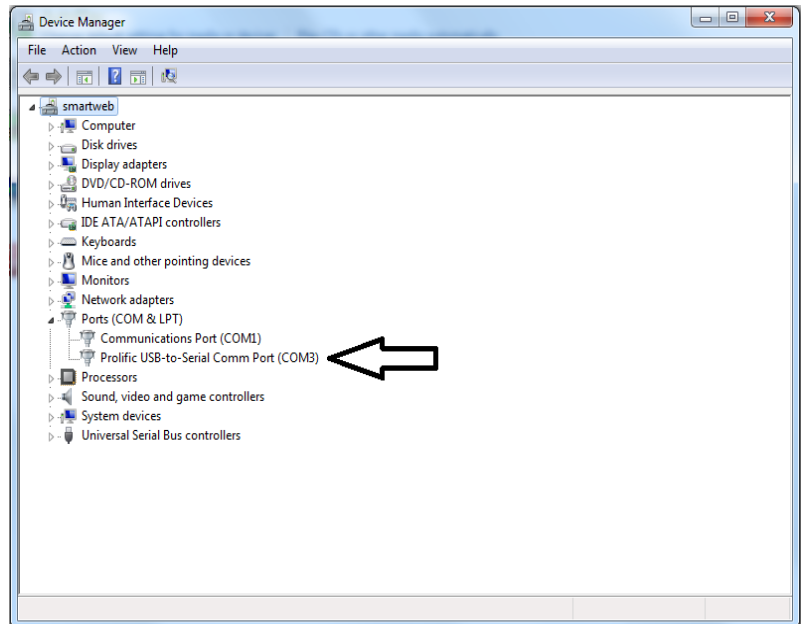


Figure 7-2

Run the terminal client of your choice such as HyperTerminal or PuTTY. Select the correct COM port on the computer. Use the following connection settings: **9600, N, 8, 1, no flow control.**

Cycling power on your unit will display a boot up message in your terminal software if the connection is correct.

NOTE: Your terminal software may not default to or display all of the settings above. If you attempt to connect and the settings above are not set correctly, after you set them correctly you may need to cycle power on your unit for communication to be established.

See Table 6-2 for a list of RS-232 commands.

LIMITED WARRANTY STATEMENT

A. Extent of limited warranty

Smart-AVI Technologies, Inc. warrants to the end-user customers that the Smart-AVI 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.

Smart-AVI 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

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

Smart-AVI shall have no obligation to repair, replace or refund unit until customer returns defective product to Smart-AVI.

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

Smart-AVI limited warranty is valid in any country where the covered product is distributed by Smart-AVI.

B. Limitations of warranty

To the extent allowed by local law, neither Smart-AVI nor its third party suppliers make any other warranty or condition of any kind whether expressed or implied with respect to the Smart-AVI 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 Smart-AVI 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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