

# HDMI Switch

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USER MANUAL

**VS481A**

## FCC INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Reorient or relocate the receiving antenna;
- ◆ Increase the separation between the equipment and receiver;
- ◆ Connect the equipment into an outlet on a circuit different from that which the receiver is connected;
- ◆ Consult the dealer or an experienced radio/television technician for help.

## RoHS

This product is RoHS compliant.

## SJ/T 11364-2006

The following contains information that relates to China.

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
电器部件	●	○	○	○	○	○
机构部件	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006规定的限量要求之下。

●: 表示符合欧盟的豁免条款, 但该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

×: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。



# VS481A USER MANUAL

## ONLINE REGISTRATION

You can register your product at our online support center:

International		<a href="http://support.aten.com">http://support.aten.com</a>
North America	ATEN TECH	<a href="http://www.aten-usa.com/product_registration">http://www.aten-usa.com/ product_registration</a>
	ATEN NJ	<a href="http://support.aten.com">http://support.aten.com</a>

## ONLINE SUPPORT

### INTERNATIONAL

Email Support		<a href="mailto:support@aten.com">support@aten.com</a>
Online Support	Technical Support	<a href="http://support.aten.com">http://support.aten.com</a>
	Troubleshooting Documentation Software Updates	<a href="http://www.aten.com">http://www.aten.com</a>
Telephone Support		886-2-8692-6959

### NORTH AMERICA

Email Support		ATEN TECH	<a href="mailto:support@aten-usa.com">support@aten-usa.com</a>
		ATEN NJ	<a href="mailto:sales@aten.com">sales@aten.com</a>
Online Support	Technical Support	ATEN TECH	<a href="http://www.aten-usa.com/support">http://www.aten-usa.com/support</a>
		ATEN NJ	<a href="http://support.aten.com">http://support.aten.com</a>
	Troubleshooting Documentation SW Updates	ATEN TECH	<a href="http://www.aten-usa.com">http://www.aten-usa.com</a>
		ATEN NJ	<a href="http://www.aten.com">http://www.aten.com</a>
Telephone Support		ATEN TECH	1-888-999-ATEN
		ATEN NJ	1-732-356-1703

## PACKAGE CONTENTS

The VS481A HDMI Switch package contains the following items:

- ◆ 1 VS481A HDMI Switch
- ◆ 1 IR Remote Control Unit
- ◆ 1 Power Adapter
- ◆ 1 HDMI Cable (1.8 m)
- ◆ 1 User Manual\*
- ◆ 1 Quick Start Guide

Check to make sure that all the components are present and that nothing got damaged in shipping. If you encounter a problem, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit, and/or any of the devices connected to it.

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\* Features may have been added to the VS481A since this manual was printed. Please visit our website to download the most up-to-date version of the manual.

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## OVERVIEW

With more and more HDMI devices entering the Home Theater market, the need for simultaneous access to different HDMI A/V sources is becoming increasingly important. Now, the VS481A HDMI Switch offers an easy and affordable way to add HDMI capabilities to your home theater system by allowing you to switch easily between up to four HDMI A/V sources that are connected to your HDMI display.

With four HDMI A/V input ports, the VS481A HDMI Switch allows you to connect four HDMI devices (such as an HD camcorder or satellite box, HD-DVD player, hi-def Blu-ray player, home theater PC, stand-alone streaming media player, or gaming console) to your HDMI monitor, display, projector or TV at the same time. The remote control and convenient front panel pushbuttons allow you to quickly and easily toggle between A/V sources, while the front panel LEDs indicate the source device at a glance.

For your convenience, the VS481A has a single input port mounted on the front panel for connecting mobile or temporary devices, such as digital cameras, while your permanent device connections are out of sight on the rear of the unit.

Furthermore, for complete system and install integration, RS232 control is standard through the VS481A's built-in bi-directional RS-232 serial remote port that allows the switch to be controlled through a high-end controller, PC, and/or home automation / home theater software package.

## FEATURES

- ◆ Allows up to four HDMI A/V sources to be connected to one HDMI display
- ◆ Toggle between A/V sources using remote control or front panel pushbuttons
- ◆ Supports high-resolution video – HDTV resolutions of 480p, 720p, 1080i, 1080p (1920x1080); VGA, SVGA, SXGA, UXGA (1600x1200), and WUXGA (1920 x 1200)
- ◆ Supports 12-bit Deep Color for HDMI formats
- ◆ Supports Dolby True HD and DTS HD Master Audio
- ◆ Up to 60 Hz refresh rate
- ◆ Long-distance transmission – up to 20 m (24 AWG) and 15 m (28 AWG)
- ◆ Built-in bi-directional RS-232 serial remote port for high-end system control
- ◆ Plug-and-play – no software installation required
- ◆ DDC compatible
- ◆ HDMI 1.3b compliant
- ◆ HDCP 1.1 compliant
- ◆ Supports HDMI Type A 19-pin female connector
- ◆ Signaling rates up to 2.25 Gbits in support of 1080p display.
- ◆ All-metal casing
- ◆ LED indication of A/V source devices
- ◆ Easy and affordable way to add four HDMI inputs to your home theater system

## SYSTEM REQUIREMENTS

### SOURCE DEVICES(S)

- ◆ HDMI Type A output connector(s)

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**Note:** A DVI/HDMI adapter is required when connecting a DVI source device.

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### DISPLAY DEVICE

- ◆ A display device or receiver with an HDMI Type A input connector

### CABLES

- ◆ 4 HDMI cables

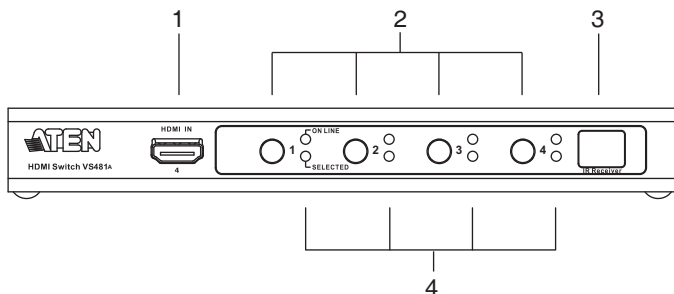
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**Note:** 1. Not all cables are included in this package. We strongly recommend that you purchase high-quality cables of appropriate length since this will affect the quality of the audio and video display. Contact your dealer to purchase the correct cable sets.

2. If you wish to utilize the VS481A's high-end serial controller function, you will also need to purchase an appropriate RS-232 cable. See *Installing the RS-232 Controller*, page 11.
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# COMPONENTS

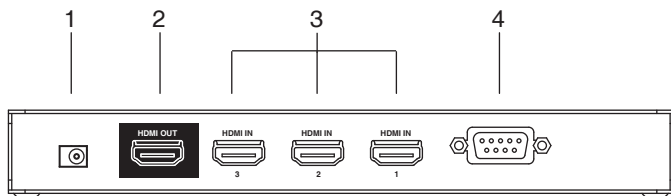
## VS481A FRONT VIEW



No.	Component	Function
1	HDMI In	Plug the cable from an HDMI source device into this port (number 4).
2	Port Selection Pushbuttons	Pressing a port selection pushbutton routes the A/V source from the corresponding input port to the output port for display.
3	IR Receiver	This receives signals from the IR remote control.
4	Port LEDs	There are two port LEDs next to each port selection pushbutton. <ul style="list-style-type: none"><li>◆ The ON LINE LED (top, orange) lights to indicate that the device attached to the corresponding port is powered on.</li><li>◆ The SELECTED LED (bottom, green) lights to indicated that the port is selected.</li></ul>

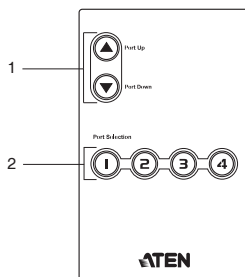


## VS481A REAR VIEW



No.	Component	Function
1	Power Jack	The power adapter cable plugs in here.
2	HDMI Out	The cable from the HDMI display device plugs in here.
3	HDMI In	The cables from the HDMI source devices can plug into any of three available ports.
4	RS-232 Serial Port	This is the serial remote port for input source selection and high-end system control.

## IR REMOTE CONTROL



No.	Component	Function
1	Port Up / Port Down Buttons	Press the Port Up button to cycle forward through the source devices (1 to 2; 2 to 3; 3 to 4; 4 to 1). Press the Port Down button to cycle backward through the source devices (4 to 3; 3 to 2; 2 to 1; 1 to 4).
2	Port Selection Buttons	Press a button to bring the focus directly to the source device attached to its associated port.

## INSTALLATION



1. Make sure that the power to all devices you will be installing has been turned off.
2. Make sure that all devices you will be installing are properly grounded.

Installation of the VS481A is simply a matter of plugging in the appropriate cables.

To install the switch, refer to the installation diagram on page 12 as you perform the following three steps:

1. Use an HDMI cable to connect the HDMI input port on the video display device to the HDMI output port on the rear of the VS481A.
2. Use HDMI cables to connect the HDMI output ports on the source device(s) to the HDMI input ports on the VS481A. Three HDMI input ports are located on the rear of the switch; the fourth HDMI port is located on the front of the switch.
3. Plug the provided power adapter into an appropriate AC power source; plug the power adapter cable into the Power Jack on the VS481A.

This completes the basic installation of the VS481A HDMI Switch. You may now power on the display and source devices.

### INSTALLING THE RS-232 CONTROLLER

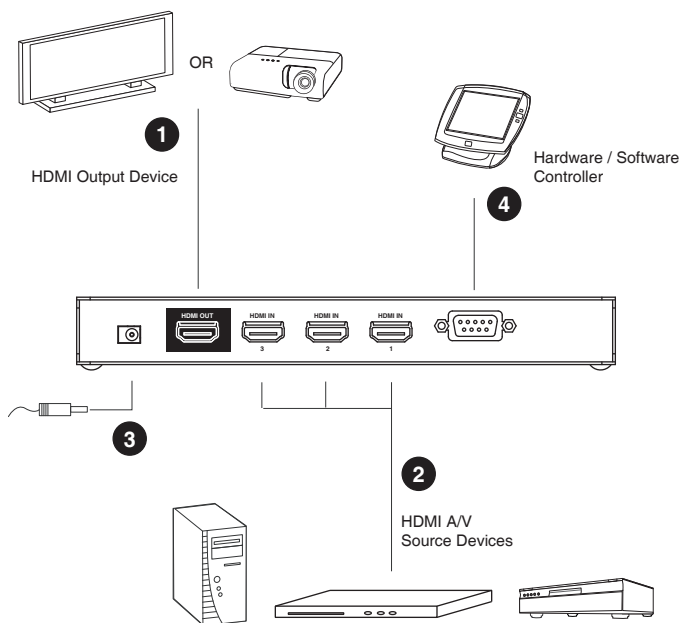
In order to use the RS-232 serial interface to attach a high-end controller (such as a PC) to the VS481A, use a serial cable such as a modem cable. The end connecting to the VS481A should have a 9-pin male connector. Connect this to the serial interface on the rear of the VS481A. Refer to number 4 on the diagram on page 12.

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**Note:** To configure the controller serial port, see page 14.

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# INSTALLATION DIAGRAM



## SOURCE DEVICE SELECTION

The VS481A HDMI Switch offers easy and flexible source device selection with either the front panel pushbuttons, with the remote control, or through the RS-232 serial interface.

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**Note:** Whenever the VS481A is powered on, it automatically selects Port 1. You may choose one of the methods outlined below to select a different port.

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### MANUAL SELECTION

To select a source device, press the pushbutton that corresponds to the port it is connected to.

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**Note:** The SELECTED LED (green) light indicates which port is currently selected.

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### REMOTE CONTROL SELECTION

To select a source device with the remote control, press the number button that corresponds to the port it is connected to.

Alternatively, you may also cycle through the available source devices by pushing the Port Up and Port Down buttons on the remote control unit.

- ◆ Use the Port Up button to select the next available port in ascending order (from left to right on the front view panel).
- ◆ Use the Port Down button to select the next available port in descending order (from right to left on the front view panel).

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**Note:** 1. The maximum range of the remote control unit is 10 meters (30 ft)

2. Aim the remote control unit at the IR receiver located on the front panel of the VS481A. For optimum performance, make sure there is a clear line-of-sight between the remote control unit and the IR receiver.

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## RS-232 SERIAL INTERFACE

The VS481A's built-in bi-directional RS-232 serial interface allows system control through a high-end controller, PC, and/or home automation / home theater software package.

### CONFIGURING THE SERIAL PORT

The controller's serial port should be configured as follows:

Baud Rate	19200
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

### SERIAL COMMANDS

The VS481A's serial commands are as follows

Control Function Protocol	Packet Format						
	Start Code	Head	Function	Data Length	Data	Checksum	End Code
Switch to Last Port	0x5A 0x7E	Port Code 0x81	Switch to Last Port 0x00	0x00	N/A	0x81	0x81 0xA5
Switch to Next Port			Switch to Next Port 0x01		N/A	0x82	
Switch to Port 1			Switch to Specified Port 0x08	0x01	0x31	0xBB	
Switch to Port 2					0x32	0xBC	
Switch to Port 3					0x33	0xBD	
Switch to Port 4					0x34	0xBE	

## POWERING OFF AND RESTARTING

If you power off the VS481A, follows these steps before powering it on again:

1. Power off the attached devices.
2. Unplug the power adapter cable from the VS481A.
3. Wait 10 seconds, and then plug the power adapter cable back in.
4. After the VS481A is powered on, power on the attached devices.

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**Note:** Whenever the VS481A is powered on, it automatically selects the A/V source attached to Port 1.

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# SPECIFICATIONS

Function		VS481A	
Display Connections		1	
Connectors	Device	HDMI In	4 x HDMI Type A Female (Black)
	Display	HDMI Out	1 x HDMI Type A Female (Black)
	RS-232 Port		1 x DB-9 Female (Black)
	Power		1 x DC Jack
LEDs	On Line		4 (Orange)
	Selected		4 (Green)
Video		HDTV resolutions of 480p, 720p, 1080i, 1080p (1920x1080); VGA, SVGA, SXGA, UXGA (1600x1200), WUXGA (1920 x 1200)	
Power Consumption		DC5.3V, 2.4 W	
Environment	Operating Temp.		0–50°C
	Storage Temp.		-20–60°C
	Humidity		0–80% RH, Non-condensing
Physical Properties	Housing		Metal
	Weight		0.47 kg
	Dimensions (L x W x H)		20.00 x 8.00 x 2.50 cm



## **LIMITED WARRANTY**

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM THE DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, DISK OR ITS DOCUMENTATION.

The direct vendor makes no warranty or representation, expressed, implied, or statutory with respect to the contents or use of this documentation, and specially disclaims its quality, performance, merchantability, or fitness for any particular purpose.

The direct vendor also reserves the right to revise or update the device or documentation without obligation to notify any individual or entity of such revisions, or update. For further inquires please contact your direct vendor.