



HDMI Switch

USER MANUAL

VS481A



FCC Information

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE

STATEMENT: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Warning: Operation of this equipment in a residential environment could cause radio interference.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Achtung: Der Gebrauch dieses Geräts in Wohnumgebung kann Funkstörungen verursachen.

KCC Statement:

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RoHS

This product is RoHS compliant.



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VS481A User Manual

Online Registration

International	http://support.aten.com
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Telephone Support

International	886-2-8692-6959
China	86-400-810-0-810
Japan	81-3-5615-5811
Korea	82-2-467-6789
North America	1-888-999-ATEN ext 4988 1-949-428-1111

Technical Support

- ◆ For international online technical support – including troubleshooting, documentation, and software updates:
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- ◆ For North American technical support:

Email Support	support@aten-usa.com	
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Telephone Support	1-888-999-ATEN ext 4988	

Package Contents

The VS481A HDMI Switch package contains the following items:

- ◆ 1 VS481A HDMI Switch
- ◆ 1 IR Remote Control Unit
- ◆ 1 Power Adapter
- ◆ 1 Standard HDMI Cable (1.8 m)
- ◆ 1 User Instructions*

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.

* 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.

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 Dolby True HD and DTS HD Master Audio
- ◆ HDMI (3D, Deep Color)
- ◆ Up to 60 Hz refresh rate
- ◆ Long-distance transmission – up to 15 m (24 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 and HDCP compatible
- ◆ Signaling rates up to 2.25 Gbits in support of 1080p display
- ◆ All-metal casing
- ◆ LED indication of A/V source devices
- ◆ Power On Detection – if one of the HDMI source devices is powered off, the VS481A will automatically switch to the next powered on device
- ◆ Easy and affordable way to add four HDMI inputs to your home theater system

System Requirements

Source Device(s)

- ◆ HDMI Type A output connector(s)

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

Display Device

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

Cables

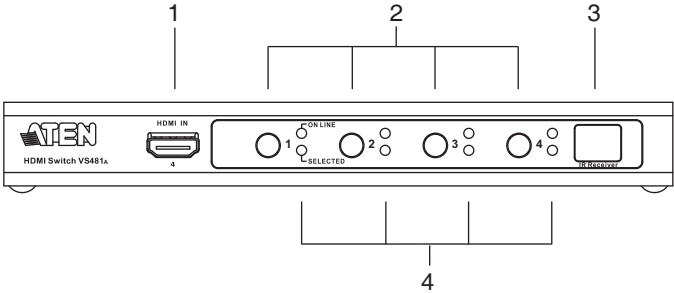
- ◆ 4 HDMI cables

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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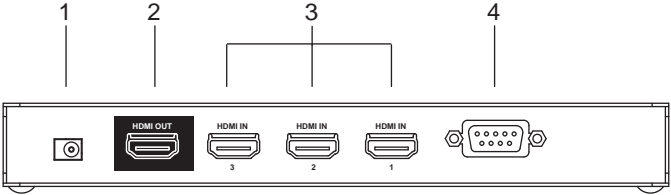
Components

VS481A Front View



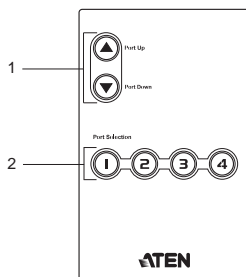
No.	Component	Function
1	HDMI In	Plug the cable from an HDMI source device into this port (number 4).
2	Port Selection Pushbuttons	Pressing a port selection pushbutton routes the A/V source from the corresponding input port to the output port for display.
3	IR Receiver	This receives signals from the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

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.

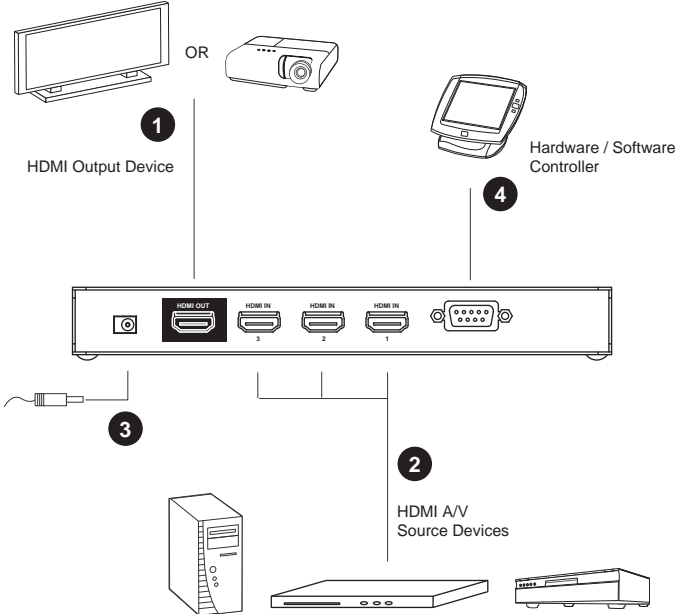
This completes the basic installation of the VS481A HDMI Switch. You may now power on the display and source devices.

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.

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

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.

Note: Whenever the VS481A is powered on, it automatically selects Port 1 if there is no video input source connected. You may choose one of the methods outlined below to select a different port.

Manual Selection

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

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

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).

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.

Power ON Detection

The Power On Detection feature enables the switch to use the next active port automatically when the active port is unplugged.

When the switch is turned on, the first plug in port acts as the active port.

Note: The switch does not use the next active port if the current port is not the active port and two active ports are turned on.

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

Switch Port Commands

The formulas for Switch Port commands are as follows:

1. Switch Command + Input Port number + Output Port number
[Enter]

For example, to switch input port 02 to output port 01, input the following:

```
sw i02 o01 [Enter]
```

2. Switch Command + Port Sequence [Enter]

For example, to switch to the next port, input the following:

sw + [Enter]

The following tables show the possible values and formats for the **Input / Output** port, **Port Number** and the **Port Sequence**:

Command	Description
sw	Switch command

I/O Port	Description
i	Input Port
o	Output Port

Port number	Description
xx	01-04 port (default is 01)
yy	01 port (default is 01)

Port Sequence	Description
+	Next Port
-	Previous Port

-
- Note:**
1. Each command string can be separated with a space.
 2. The **Input / Output** port command string can be skipped, and the default value(s) will be used. For example, to switch the input port 01 to the default output port 01, simply enter: **sw i01**.
 3. The input port and output port command strings are interchangeable. For example: **sw i02 o01** can also be **sw o01 i02**.
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Power On Detection Commands

The Power On Detection feature is turned on by default.

The formula for Power On Detection commands is as follows:

Power On Detection + Control command [Enter]

For example, to turn off the Power On Detection feature, input the following:

pod off [Enter]

The following tables show the possible values for the **Control** string:

Command	Description
pod	Power On Detection command

Control	Description
on	Turn on
off	Turn off

Note: Each command can be separated with a space.

Verification

After entering a command, a verification message appears at the end of the command line as follows:

- ◆ **Command OK** - indicates that the command is correct and successfully performed by the switch
- ◆ **Command incorrect** - indicates that the command has the wrong format and/or values.

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.

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

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)
Buttons	Port Switch		4
IR Control			1
HDMI Resolution			HDTV resolutions of 480p, 720p, 1080i, 1080p (1920x1080); 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

ATEN warrants its hardware in the country of purchase against flaws in materials and workmanship for a Warranty Period of two [2] years (warranty period may vary in certain regions/countries) commencing on the date of original purchase. This warranty period includes the [LCD panel of ATEN LCD KVM switches](#). Select products are warranted for an additional year (see [A+ Warranty](#) for further details). Cables and accessories are not covered by the Standard Warranty.

What is covered by the Limited Hardware Warranty

ATEN will provide a repair service, without charge, during the Warranty Period. If a product is defective, ATEN will, at its discretion, have the option to (1) repair said product with new or repaired components, or (2) replace the entire product with an identical product or with a similar product which fulfills the same function as the defective product. Replaced products assume the warranty of the original product for the remaining period or a period of 90 days, whichever is longer. When the products or components are replaced, the replacing articles shall become customer property and the replaced articles shall become the property of ATEN.

To learn more about our warranty policies, please visit our website:

<http://www.aten.com/global/en/legal/policies/warranty-policy/>

