Simply Better Connections™

4-Port HDMI Switch

USER MANUAL

VS481B

HIGH-DEFINITION MULTIMEDIA INTERFACE

EMC 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.

The 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.

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.

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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Manual Date: 2021-01-13

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專業級影音類產品

設備名稱 Equipment Name	4 埠 4K HDMI 影音切換器			型號（型式） Type designation (Type)	VS481B	
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
電纜線 Cable	–	○	○	○	○	○
印刷電路部件 PCBA	–	○	○	○	○	○
塑膠 / 其他部件 Plastic / Other parts	○	○	○	○	○	○
金屬部件 Metal parts	–	○	○	○	○	○

備考 1. 〝超出 0.1 wt %〞及 〝超出 0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。
Note 1：“Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.
備考 2. 〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。
Note 2：“ ○ ” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.
備考 3. 〝－〞係指該項限用物質為排除項目。
Note 3：“–” indicates that the restricted substance corresponds to the exemption.

製造商：宏正自動科技股份有限公司
地址：新北市汐止區大同路二段 125 號三樓

警告使用者： 此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。

D33866
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VS481B User Manual

Online Registration

International	http://support.aten.com

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:
  http://support.aten.com
- For North American technical support:

Email Support		support@aten-usa.com
Online Technical Support	Troubleshooting Documentation Software Updates	http://support.aten.com
Telephone Support		1-888-999-ATEN ext 4998

Package Contents

The VS481B package contains the following items:

- 1 VS481B 4-Port HDMI Switch
- 1 HDMI Cable
- 1 IR Remote Control
- 1 Power Adapter
- 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.

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* Features may have been added to the VS481B since this manual was published. Please visit our website to download the most up-to-date version of the manual.

Overview

The VS481B 4-Port HDMI Switch allows you to connect 4 HDMI sources to one HDMI display and quickly switch between the devices via front panel pushbuttons, RS-232 or IR remote control. The VS481B has four HDMI ports to provide device connections for digital cameras, Blue-ray players, satellite receivers, camcorders, PC's, gaming consoles and more.

The VS481B supports resolutions up to 4k2k using the new Ultra HD digital format for high-definition displays.

The VS481B's Instant Switching capability provides a smooth transition between HDMI ports to increase system efficiency. The auto switching feature provides different modes for auto port selection when a device loses power or a new device is plugged into the VS481B.

The built-in bi-directional RS-232 serial port allows the switch to be controlled through a high-end controller, PC, and/or automation/theater software package.

Features

- Allows up to four HDMI A/V sources to be connected to one HDMI display
- Quick and easy switching between HDMI sources via front panel pushbuttons, RS-232 or IR Remote control
- Supports 340MHz bandwidth for high performance video
- Auto switching modes for auto port selection
- HDMI (3D, Deep Color, 4kx2k); HDCP compatible
- Long distance transmission – up to 15 m (24 AWG)
- Consumer Electronics Control (CEC) support
- Supports Dolby True HD and DTS HD Master Audio
- Built-in bi-directional RS-232 serial port for high-end system control*
- Instant switching between HDMI input sources
- Supports IR extension using a receiver extension cable**
- LED indication of selected video source

Note: 1. The RS-232 AP can be downloaded from our website: www.aten.com.

2. The IR extension cable is sold separately. To purchase an IR extension cable, contact your dealer and refer to part 2XRT-0003G.

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

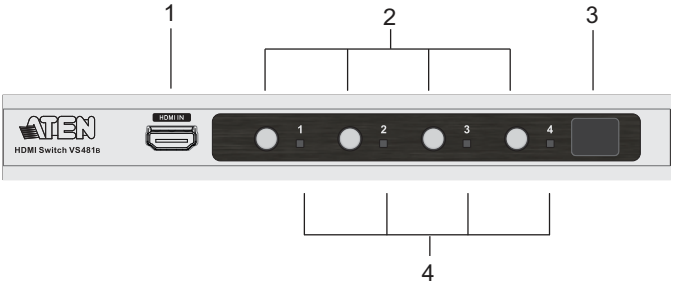
- 4 HDMI cables

Note: 1. 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 cables.

2. If you wish to utilize the VS481B's high-end serial controller function, you will also need to purchase an appropriate RS-232 cable. See *Installing the RS-232 Controller*, page 12.

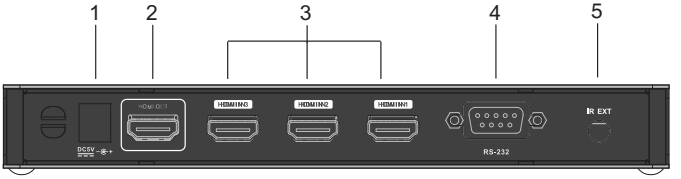
Components

VS481B Front View

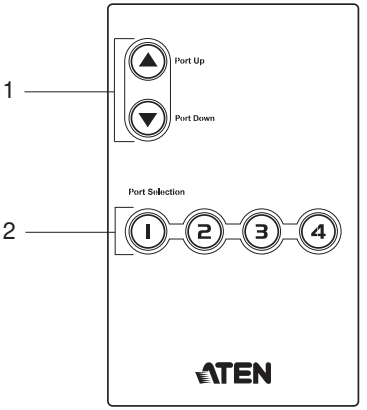


No.	Component	Function
1	HDMI Input Port	Plug the cable from an HDMI source device into this port.
2	Port Selection Pushbuttons	Pressing a port selection pushbutton routes the A/V source from the corresponding input port to the output port for display.
3	IR Receiver	This receives signals from the IR remote control.
4	Port LEDs	The SELECTED LED lights up (green) to indicate that the port is selected.

VS481B Rear View



No.	Component	Function
1	Power Jack	The power adapter cable plugs in here.
2	HDMI Output Port	The cable from the HDMI display device plugs in here.
3	HDMI Input Port	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.
5	IR Extension Port	Connect the IR Extender to this port. **Note:** An IR receiver can be purchased separately, contact your ATEN dealer for details.



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 VS481B 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 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 VS481B.
2. Use HDMI cables to connect the HDMI output ports on the source device(s) to the HDMI input ports on the VS481B. 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. (Optional) If you have an IR receiver*, plug it into the IR Extension port and place it where the IR remote can reach it.
4. Plug the provided power adapter into an appropriate AC power source; plug the power adapter cable into the Power Jack on the VS481B.

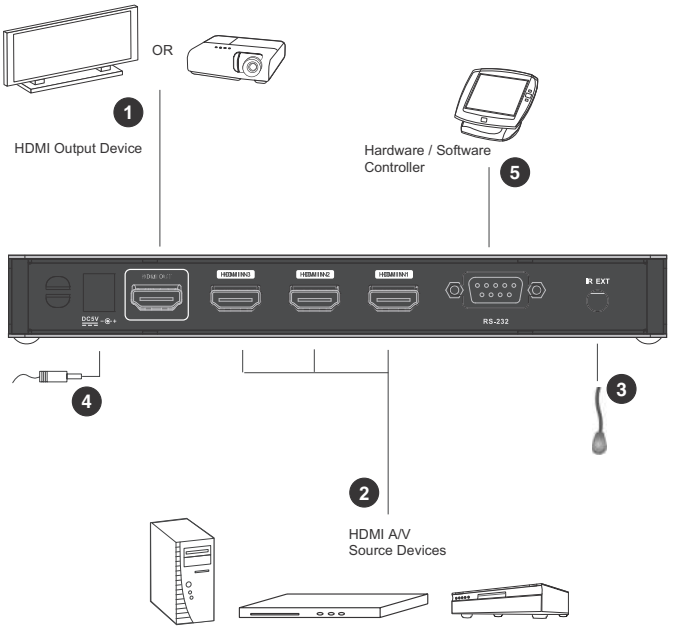
Note: To purchase an IR extension cable, contact your dealer and refer to part 2XRT-0003G.

Installing the RS-232 Controller

To attach a high-end controller (such as a PC) to the VS481B's RS-232 serial interface, use a serial cable. The end connecting to the VS481B should have a 9-pin male connector. Connect this to the serial interface on the rear of the VS481B. Refer to number 5 on the diagram on page 12.

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

Installation Diagram



Source Device Selection

The 4-Port HDMI Switch offers easy and flexible source device selection with either the front panel pushbuttons, remote control, or through the RS-232 serial interface.

Source device selection and other system controls can be managed by using RS-232 serial commands. See *RS-232 Serial Interface*, page 15.

By default auto switch will place priority on the next port that has a new source device connected to it.

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 6 meters (20 ft.).

2. Aim the remote control unit at the IR receiver located on the front panel of the VS481B. For optimum performance, make sure there is a clear line-of-sight between the remote control unit and the IR receiver.

RS-232 Serial Interface

The VS481B's built-in bi-directional RS-232 serial interface allows system control through a high-end controller, PC, and/or automation/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

Verification

After entering a command, using the instructions on the pages that follow, 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.

Switch Port Command

The formulas for Switch Port commands are as follows:

1. Switch Command + Input + Port Number + Control [Enter]

For example, to switch to input port 02, type the following:

sw i02 [Enter]

2. Switch Command + Control [Enter]

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

sw + [Enter]

3. Switch Command + Control [Enter]

For example, to disable the HDMI output signal, type the following:

sw off [Enter]

The following tables show the possible values and formats for the **Switch Port** formulas:

Command	Description
sw	Switch Command

Input	Description
i	Input command

Port Number	Description
xx	01-04 port (default is 01)

Control	Description
on	Enable HDMI Output Signal
off	Disable HDMI Output Signal
+	Next Port
-	Previous Port

Note: Each command can be separated with a space.

The following table lists the available commands:

Command	Input	Port	Control	Enter	Description
sw	i	xx		[Enter]	Switch Input Port
sw			on	[Enter]	Turn on (Display on)
			off	[Enter]	Turn off (No Display)
sw			+	[Enter]	Switch to the next input
			-	[Enter]	Switch to the previous input

Read Command

To view the current configuration settings of the device.

The formula for the Read command is as follows:

1. Read Command [Enter]

To read the current configuration settings, type the following:

read [Enter]

The following table shows the value for the **Read** formula:

Command	Description
read	Read information from the device

Reset Command

Resets the device back to the factory default settings.

The formula for the Reset command is as follows:

1. Reset Command [Enter]

To reset the device to the factory default settings, type the following:

reset [Enter]

The following table shows the value for the **Reset** formula:

Command	Description
reset	Resets the device back to the factory default settings

Switch Mode Command

You can choose how the VS481B behaves when a new input source is connected to it. By default the Next switch mode setting is enabled. Use the commands below to select a different mode. There are three Switch Modes:

Next - Switch priority is placed on the next port that has a new source device connected to it. (default)

Default - The switch behaves normally without automatic switching.

Auto - Places priority on a selected port so that when a source is connected to the said port, the VS481B automatically switches to it, and the port can not be changed until the source is unplugged or auto switching mode is disabled with the default command.

In addition, the **Go To** function enables the VS481B to switch to the next port with a powered on source device when the current input source device is powered off.

The formulas for Switch Mode commands are as follows:

1. Switch Command + Input Command + Port Number + Control [Enter]

For example, to enable Auto mode for port 02, type the following:

swmode i02 auto [Enter]

2. Switch Command + Control [Enter]

For example, to enable Next mode, type the following:

swmode next [Enter]

3. Switch Command + Control [Enter]

For example, to enable Default mode to disable Next/Auto mode, type the following:

swmode default [Enter]

4. Switch Command + Control [Enter]

For example, to enable the Go To function, type the following:

swmode goto on [Enter]

The following tables show the possible values and formats for the **Switch Mode** formulas:

Command	Description
swmode	Switch Mode command

Input Command	Description
i	Input command

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

Control	Description
next	Priority is placed on the next port that has a new source connected to it (default)
default	No automatic switching
auto	Priority is placed on a selected port

Control	Description
goto on	Switch to the next port with a powered on source device when the current input source is off.
goto off	Disable Go To (default)

The following table lists the available commands:

Command	Input	Port #	Control	Enter	Description
swmode	-	-	default	[Enter]	Use Default switch mode
	-	-	next	[Enter]	Use Next switch mode
	i	xx	auto	[Enter]	Use Auto switch mode for port #
	-	-	goto on	[Enter]	Enable Go To function
	-	-	goto off	[Enter]	Disable Go To function

Hot Plug Detect Command

When enabled Hot Plug Detect (HPD) will force the connected source device to read the displays EDID information. When disable, the device will skip the HPD process to save time. The EDID contains a display's basic information and is used by the source device to utilize the best resolution across different monitors.

The formulas for Hot Plug Detect (HPD) commands are as follows:

1. HPD Command + Control [Enter]

For example, to enable Hot Plug Detect, type the following:

hpd on [Enter]

The following tables show the possible values and formats for the **HPD** formulas:

Command	Description
hpd	Hot Plug Detect command

Control	Description
on	Enables Hot Plug Detect
off	Disables Hot Plug Detect (default)

The following table lists the available commands:

Command	Control	Enter	Description
hpd	on	[Enter]	Enables Hot Plug Detect
	off	[Enter]	Disables Hot Plug Detect

Baud Rate Command

You can select the RS-232 Baud Rate you want the VS481B to use. Options are 9600, 19200 (default), 38400, and 57600.

The formulas for the Baud Rate commands are as follows:

1. Baud Command + Control [Enter]

For example, to select 38400 as your baud rate, type the following:

baud 38400 [enter]

The following tables show the possible values and formats for the **Baud Rate** formulas:

Command	Description
baud	Sets the RS-232 baud rate

Control	Description
9600	Use 9600 baud rate
19200	Use 19200 baud rate (default)
38400	Use 38400 baud rate
57600	Use 57600 baud rate

The following table lists the available commands:

Command	Control	Enter	Description
baud	9600 / 19200 / 38400 / 57600	[Enter]	Sets the RS-232 baud rate

Powering Off and Restarting

If you power off the VS481B, follows these steps before powering it on again:

1. Power off the attached devices.
2. Unplug the power adapter cable from the VS481B.
3. Wait 10 seconds, and then plug the power adapter cable back in.
4. After the VS481B is powered on, power on the attached devices.

Note: Whenever the VS481B is powered on, it automatically selects the A/V source attached to Port 1.

Specifications

Function			VS481B
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
	IR extension port		1 x 3.5mm phone jack
Switches	Port Switch		4 pushbutton
IR Control			1
LEDs	Selected		4 (Green)
Video			HDTV resolution: 480p, 720p, 1080i, 1080p, and up to 4k2k (4096 x 2160 or 3840 x 2160) VGA resolution: SVGA, SXGA, UXGA, WUXGA
Power Consumption			DC5V, 2.5W
Environment	Operating Temp.		0–50ºC
	Storage Temp.		-20–60ºC
	Humidity		0–80% RH, Non-condensing
Physical Properties	Housing		Metal
	Weight		0.47 kg
	Dimensions (L x W x H)		20.00 x 8.25 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 detective, 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/