



# 8-Port HDMI Splitter

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USER MANUAL

**VS0108HA**

## FCC INFORMATION

### Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital service, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Any changes or modifications made to this equipment may void the user's authority to operate this equipment. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, may cause harmful 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 to which the receiver is connected.
- ◆ Consult the dealer or an experienced radio/TV technician for help.

### 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.

## 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。



# VSO108HA USER MANUAL

## ONLINE REGISTRATION

International	<a href="http://eservice.aten.com">http://eservice.aten.com</a>
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## TELEPHONE SUPPORT

International	886-2-8692-6959
China	86-10-5255-0110
Japan	81-3-5615-5811
Korea	82-2-467-6789
North America	1-888-999-ATEN ext 4988
United Kingdom	44-8448-158923

## TECHNICAL SUPPORT

- ◆ For international online technical support – including troubleshooting, documentation, and software updates:  
**<http://eservice.aten.com>**
- ◆ For North American technical support:

Email Support		<a href="mailto:support@aten-usa.com">support@aten-usa.com</a>
Online Technical Support	Troubleshooting Documentation Software Updates	<a href="http://www.aten-usa.com/support">http://www.aten-usa.com/support</a>
Telephone Support		1-888-999-ATEN ext 4998

## PACKAGE CONTENTS

The VS0108HA 8-Port HDMI Splitter package contains the following items:

- ◆ 1 VS0108HA 8-Port HDMI Splitter
- ◆ 1 Power Adapter
- ◆ 1 Mounting Kit
- ◆ 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 VS0108HA since this manual was published. Please visit our website to download the most up-to-date version of the manual.

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## **OVERVIEW**

The VS0108HA HDMI Splitter is the ideal solution for sending one source of digital high definition video to eight HDMI displays at the same time.

It supports all HDMI-enabled equipment, such as DVD players, satellite set-top boxes and HDMI displays. In addition, it has an EDID Mode Selection feature, and is able to copy a display's EDID to the source device for smooth power-up of various monitors and display devices. You can easily control the VS0108HA via the rear panel pushbutton/switch, or by connecting a PC/controller to the RS-232 port.

The VS0108HA HDMI Splitter is HDCP (High Bandwidth Digital Content Protection) compliant, making it effective for use with all HDMI displays in home theater applications, as well as in corporate, educational and commercial settings.

## FEATURES

- ◆ Connects one HDMI video source to 8 HDMI displays at the same time
- ◆ Features EDID Expert technology:
  - ◆ EDID Library with 14 default EDID configurations
  - ◆ Built-in EDID Mode selection
  - ◆ Copies a display's EDID to the source device
- ◆ Supports Dolby True HD and DTS HD Master Audio
- ◆ Built-in bi-directional RS-232 serial port for high-end system control
- ◆ Long distance transmission – 15 m (24 AWG)
- ◆ Superior video quality – HDTV resolutions of 480p, 720p, 1080i, 1080p (1920x1080) and Ultra HD 4kx2k; VGA, SVGA, SXGA, UXGA, WUXGA (1920x1200)
- ◆ HDMI (Deep Color, 4kx2k); HDCP compatible
- ◆ DDC Compatible
- ◆ Consumer Electronics Control (CEC) allows interconnected HDMI devices to communicate and respond to one remote control
- ◆ Signaling rates up to 3.4 Gbits
- ◆ Rack Mountable
- ◆ Firmware upgradeable

# SYSTEM REQUIREMENTS

## SOURCE DEVICE

The following equipment must be installed on any computer that acts as a source of HDMI content:

- ◆ HDMI Type A output connector

## DISPLAY DEVICE

- ◆ A display device or receiver with an HDMI Type A input connector for each output port you will be installing

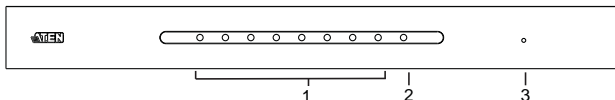
## CABLES

- ◆ HDMI cables for the source device
- ◆ HDMI cables for each output port you will be installing

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- Note:**
1. No HDMI 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. A DVI/HDMI adapter is required when connecting to a DVI source or display device. If a DVI/HDMI adapter is used, audio is not supported.
  3. If you wish to utilize the VS0108HA's high-end serial controller function, you will also need to purchase an appropriate RS-232 cable. See *Installing the RS-232 Controller*, page 13.
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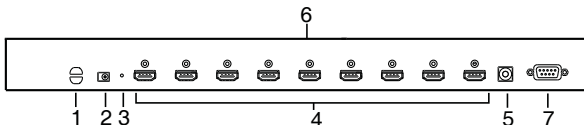
# COMPONENTS

## FRONT VIEW



No.	Component	Description
1	Output Port LEDs (1~8)	Lights to indicate there is a working connection to the display device(s) connected to the port(s).
2	Input LED	Lights to indicate that there is a working connection to the source device (i.e., computer).
3	Power LED	Lights green to indicate that the VS0108HA is receiving power and is up and running. Lights orange to indicate that the VS0108HA is in standby mode.

## REAR VIEW



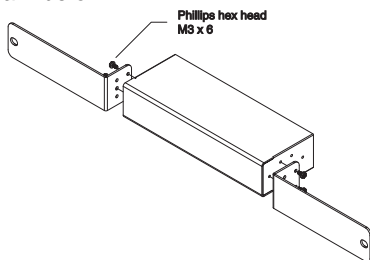
No.	Component	Function
1	Cable Tie Slot	If you want to use a cable tie to gather the cables together, you can run it through this slot to attach it to the unit.
2	Power Jack	The power adapter cable plugs in here.
3	Firmware Upgrade button	Press this to have the VS0108HA enter Firmware Upgrade Mode. When the upgrade is done, press it again to exit the mode.
4	HDMI Output port section	The cables from your HDMI display devices plug into these ports.
5	EDID Mode Switch	Press this button to cycle through the EDID modes (0~7). Refer to page 11 for more details.
6	HDMI Input port	The cable from your HDMI source device plugs in here.
7	RS-232 Serial Port	This is the serial remote port for output source selection and high-end system control, as well as for updating the device firmware.



## MOUNTING

For convenience and flexibility, the VS0108HA can be mounted on system racks. To rack mount a unit do the following:

1. Using the screws provided in the Rack Mount Kit, screw the mounting brackets into the side panels of the unit as shown in the diagram below:

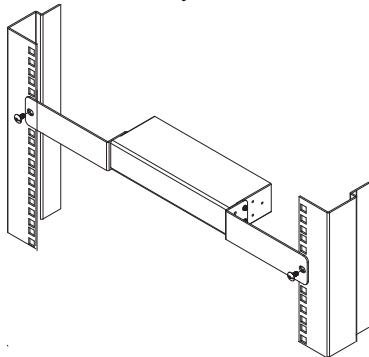


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**Note:** We recommend that you use M5 x 12 Phillips Type I cross, recessed type screws.

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2. Screw the bracket into any convenient location on the rack.



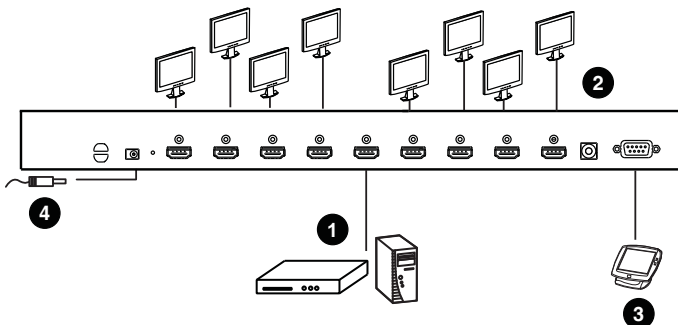
## INSTALLATION



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.

Refer to the installation diagram (the numbers in the diagram correspond to the numbers of the steps) and do the following:

1. Use a Male-to-Male Type A HDMI cable to connect your computer or HDMI source device to the VS0108HA's **HDMI Input** port.
2. Use Male-to-Male Type A HDMI cables to connect up to eight HDMI display devices to the **HDMI Output** ports.
3. (Optional) To edit the VS0108HA system settings through the RS-232 port, connect the hardware / software controller here.
4. Plug the power adapter that came with the VS0108HA into an AC power source, then plug the power adapter cable into the splitter's Power Jack

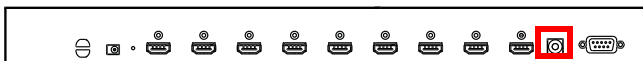


## EDID

Extended Display Identification Data (EDID) is a data format that contains a display's basic information and is used to communicate with the video source/system. The VS0108HA lets users select an EDID Mode, which sets how the source device acquires a display's EDID.

### EDID MODE SELECTION

The EDID Mode can be selected using the EDID Mode Switch located at the VS0108HA unit's rear panel.



To select an EDID, press the EDID Mode Switch to toggle between the ATEN default EDID and other EDID Settings (0~7) as follows:

- ◆ **0 (Default)** - EDID is set to the ATEN default configuration. The user can further choose between 14 ATEN default EDID settings available via the RS-232 command (see *ATEN Default EDID*, page 19)
- ◆ **1 (Port 1)** - Implements the EDID of the connected display to Port 1, and passes it to the video source. The VS0108HA is able to copy the EDID of any connected display to the input source (see *EDID Commands*, page 16)
- ◆ **2 (Auto)** - Implements the EDID of all connected displays. The VS0108HA uses the best resolution for all displays
- ◆ **3 (SW)** - Uses the EDID configuration defined through the RS-232 command. Refer to *EDID Commands*, page 16 for more details
- ◆ **4 ~ 7-** Reserved

### EDID VIA RS-232

To use one of the 14 available ATEN default EDID configurations and to copy the EDID of any connected display to the input source, see *EDID Commands*, page 16.

## FIRMWARE UPGRADE

Go to our Internet support site and choose the model name of your device (VS0108HA) to get a list of available Firmware Upgrade Packages. Choose the Firmware Upgrade Package you want to install (usually the most recent), and download it to your computer. Do the following steps:

1. Power off your VS0108HA by unplugging the power adapter.
2. Use a Serial RS-232 cable to connect a COM port on your computer to the VS0108HA **RS-232** port.
3. Push and hold the **Firmware Upgrade** pushbutton on the unit's rear panel, and power on the VS0108HA unit to enter the firmware upgrade mode.
4. Follow the step-by-step procedure displayed on your screen.

## 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 VS0108HA, use a serial cable such as a modem cable. The end connecting to the VS0108HA should have a 9-pin male connector. Connect this to the serial interface on the rear of the VS0108HA. 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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## RS-232 SERIAL INTERFACE

The VS0108HA'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

The available formulas for Switch Port commands are as follows:

**Switch Command + Output Command + Port Number + Control**

For example, to turn on output port 02, type the following:

**sw o02 on**

*-or-*

For example, to turn off output port 01, type the following:

**sw o01 off**

The following table shows the possible values for the Switch Port commands:

Command	Description
sw	Switch command

Output Command	Description
o	Output command

Port Number	Description
yy	01-08 port
*	All output ports (default)

Control	Description
on	Turn on the display
off	Turn off the display

The following table shows the available command list:

Command	Input	Port	Control	Enter	Description
sw	o	yy	on	[Enter]	Turn on display port yy
sw	o	yy	off	[Enter]	Turn off display port yy
sw	o	*	on	[Enter]	Turn on all displays
sw	o	*	off	[Enter]	Turn off all displays

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- Note:** 1. Each command string can be separated with a space.  
 2. The **Port Number** command string can be skipped, and the default value will be used.
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## BAUD RATE SETTING COMMANDS

You can set up the VS0108HA baud rate via RS-232.

The formula for Baud Rate setting commands is as follows:

**Baud + Baud Rate Setting value [Enter]**

For example, to set the baud rate to 9600, input the following:

**baud 9600 [Enter]**

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

Command	Description
baud	Power On Detection command

Control	Description
9600	Uses 9600 baud rate
19200	Uses 19200 baud rate (default)
38400	Uses 38400 baud rate
115200	Uses 115200 baud rate

The following table shows the available command list:

Command	Control	Enter	Description
baud	9600	[Enter]	The VS0108HA implements 9600 baud rate setting
baud	19200	[Enter]	The VS0108HA implements 19200 baud rate setting (default)
baud	38400	[Enter]	The VS0108HA implements 38400 baud rate setting
baud	115200	[Enter]	The VS0108HA implements 115200 baud rate setting

## EDID COMMANDS

You can set up which EDID mode the VS0108HA uses, select one of the 14 available ATEN default EDID configurations, and copy the EDID of any connected display to the input source with the following command:

### EDID Command + Control [Enter]

The following tables show the possible values and formats for the **Control** command:

Command	Description
edid	Enable EDID selection

Control	Description
portyy	Implement the EDID of the connected display to Port yy, and pass it to the video source (Note: yy: 01-08)
auto	Implement the EDID of all connected displays. The VS0108HA uses the best resolution for all displays
defaultyy	Implements the specified ATEN default EDID configuration (Note: yy: 00-13, default is 00)

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**Note:** For the port and default command strings, the yy variable must be entered for the command to work.

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The following table shows the available command list:

Command	Control	Enter	Description
edid	portyy	[Enter]	The EDID from Port yy is passed to the video source (yy: 01-08)
edid	auto	[Enter]	The VS0108HA implements the EDID of all connected displays and uses the best resolution for all displays (default)
edid	defaultyy	[Enter]	ATEN's default EDIDyy is passed to the video source (yy: 00-13, default is 00)

For more information on ATEN default EDID configuration, see *ATEN Default EDID*, page 19.



## READ COMMANDS

View information from the device using the following command:

### Read Command + Port + Control [Enter]

The following tables show the possible values and formats for the **Control** command:

Command	Description
read	Reads and displays information from the VS0108HA

The following table shows the available command list:

Command	Enter	Description
read	[Enter]	Displays information such as firmware version and EDID

## RESET COMMANDS

Reset the VS0108HA to default factory settings using the following command:

### Reset Command [Enter]

The following tables show the possible value for the **Control** command:

Command	Description
reset	Resets to factory default settings

The following table shows the available command list:

Command	Enter	Description
reset	[Enter]	Resets the VS0108HA

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**Note:** The Reset command reverts the Baud Rate to default, as well as switches all output devices on.

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## 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 VS0108HA, follows these steps before powering it on again:

1. Power off the attached devices.
2. Unplug the power adapter cable from the VS0108HA.
3. Wait 10 seconds, and then plug the power adapter cable back in.
4. After the VS0108HA is powered on, power on the attached devices.

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**Note:** Whenever the VS0108HA is powered on, it automatically selects the first port connected to a powered on source device.

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## ATEN DEFAULT EDID

The ATEN default EDID configuration can be selected via the RS-232 command line (see *EDID Commands*, page 16):

Default EDID No.	Configuration
00	720p video, 2 ch audio (default)
01	1080p video, 2 ch audio
02	1080p video, 5.1 ch audio
03	1080p video, 7.1 ch audio
04	1080i video, 2 ch audio
05	1080i video, 5.1 ch audio
06	1080i video, 7.1 ch audio
07	3D 1080p, 2 ch audio
08	3D 1080p, 5.1 ch audio
09	3D 1080p, 7.1 ch audio
10	1024 x 768 DVI format
11	1280 x 1024 DVI format
12	1920 x 1080 DVI format
13	1920 x 1200 DVI format

## SPECIFICATIONS

Function		VS0108HA	
Display Connections		8	
Connectors	Device	HDMI In	1 x HDMI Type A Female (Black)
	Display	HDMI Out	8 x HDMI Type A Female (Black)
	Power Jack		1 x DC Jack
	RS-232		1 x DB-9 Female (Black)
LEDs	Output		8 (Green)
	Input		1 (Green)
	Power		1 (Green + Orange)
Video		HDTV resolution of 480p, 720p, 1080i, 1080p (1920x1080) and Ultra HD 4kx2k; VGA, SVGA, SXGA, UXGA, WUXGA (1920x1200)	
Power Consumption		DC 5V, 13 W	
Environment	Operating Temp.		0–50°C
	Storage Temp.		-20–60°C
	Humidity		0–80% RH, Non-condensing
Physical Properties	Housing		Metal
	Dimensions (L x W x H)		43.72 x 15.78 x 4.40 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.