



8-Port HDMI Splitter

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 | http://eservice.aten.com |
|---------------|---|

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 | | support@aten-usa.com |
| Online Technical Support | Troubleshooting Documentation Software Updates | http://www.aten-usa.com/support |
| 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.

* 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

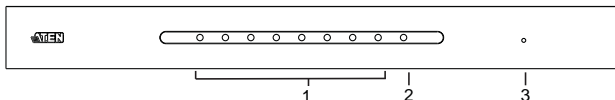
CABLES

- ◆ 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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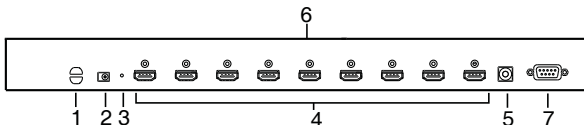
COMPONENTS

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

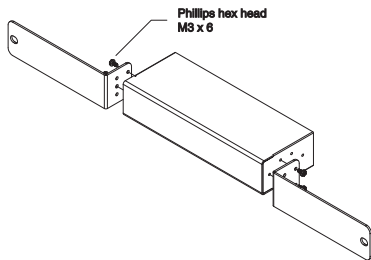


| No. | Component | Function |
|-----|--------------------------|--|
| 1 | Cable Tie Slot | If you want to use a cable tie to gather the cables together, you can run it through this slot to attach it to the unit. |
| 2 | Power Jack | The power adapter cable plugs in here. |
| 3 | Firmware Upgrade button | 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

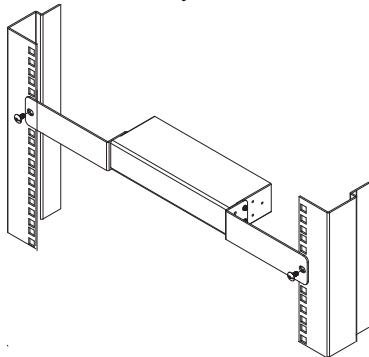
For convenience and flexibility, the VS0108HA can be mounted on system racks. To rack mount a unit do the following:

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:



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

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



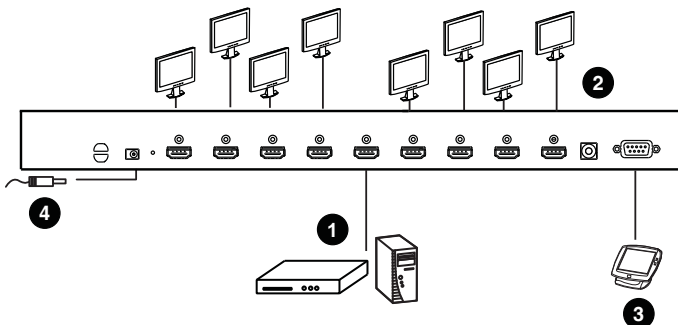
INSTALLATION



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

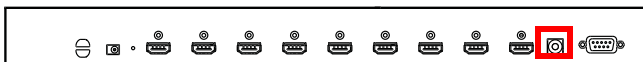


EDID

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.

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

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 |

-
- 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.
-

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) |

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

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 |

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

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.

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

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.