DVI Video Splitter

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.

KC Information: 이 기기는 가정용 (B 급) 전자파적합기기로서 주로 가정에서 사용하는것을 목적으로 하며 , 모든 지역에서 사용할 수 있습니다 .

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。

VS162 / VS164 User Manual

Online Registration

International	http://support.aten.com
North America	http://www.aten-usa.com/product_registration

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://support.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 VS162 / VS164 Video Splitter package contains the following items:

- ◆ 1 VS162 / VS164 Video Splitter
- ◆ 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 VS162 / VS164 since this manual was printed. Please visit our website to download the most up-to-date version of the manual.

Overview

The 2-port VS162 and 4-port VS164 video splitters chart a new direction in multimedia functionality by combining DVI quality video and audio. They take the signals from an audio/video source and replicate them to two (VS162) or four (VS164) audio/video outputs.

Splitters can be cascaded to three levels to handle up to 64 monitors (VS164), which makes them the ideal solution for situations such as:

a) Broadcasting video information to the public (news headlines, stock prices, airline and train schedules, etc.)

b) Company training facilities

c) Classroom instruction

Features

- ◆ Connects computers with DVI graphics to multiple DVI compatible monitors or projectors
- ◆ Fully compliant with the DVI-digital and DVI-analog
- ◆ Supports DDWG (Digital Display Working Group) standard for DVI Compliant monitors
- ◆ Speaker enabled for audio enjoyment
- ◆ Cascadable to 3 levels – provides up to 8/64 video signals
- ◆ Cascade distance: Source to Device - 1.8m, Device to Device - 5m, Device to Display - 5m
- ◆ Installs in minutes
- ◆ Maintains highest single link video resolution (up to 1920 x 1200)
- ◆ DDC, DDC2, DDC2B Compatible (Port 1 only)
- ◆ DDC/CI support – allows color, brightness, contrast and other adjustments to be made via GUI for DDC/CI-enabled LCD monitors
- ◆ HDCP compliant

System Requirements

Consoles

- A DVI display that matches the computer's DVI display card that is capable of the highest resolution that you will be using on the DVI output.
- Speakers for audio output (optional)

Computers

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

- A DVI-I or DVI-A display port

  Note: The quality of the display is affected by the quality of the DVI display card. For best results, we recommend you purchase a high quality product.

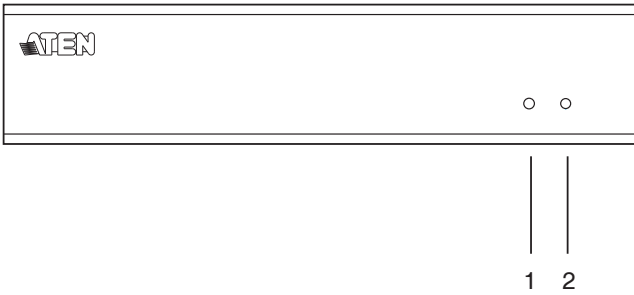- An audio out port (optional – for audio accompaniment to the display)

Cables

Two (VS162) or four (VS164) sets of DVI cable are required to properly operate this DVI Switch (not included).

Note: 1. Cables are not included in this package. Since the quality of the display is affected by the quality and the length of the cables, we strongly recommend that you purchase high quality cables. Contact your dealer to purchase the correct cable sets for your switch.

  2. There are three types of DVI signals (DVI-I, DVI-A, DVI-D). The cable type must match the type of signal being used by the DVI source and the DVI display.
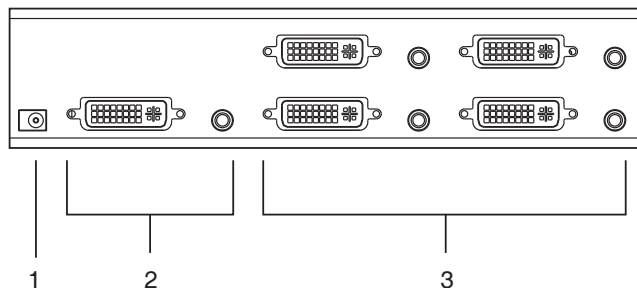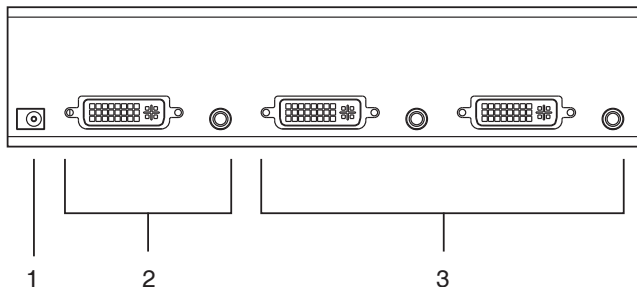
Components

Front View

No.	Component	Description
1	Activity LED	Lights to indicate that there is a working DVI connection to the computer
2	Power LED	Lights to indicate that the VS162 / VS164 is receiving power and is up and running.

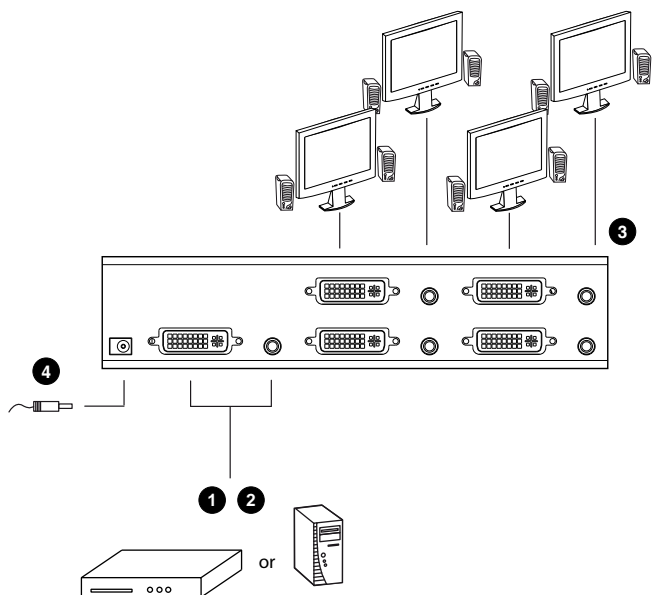| No.	Component	Description
1	Power Jack	The power adapter cable plugs in here.
2	A/V Input Section	The cables from your source device's DVI video and speaker ports plug in here.
3	A/V Output Section	The cables from your DVI monitors and speakers plug in here.

Installation

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1. Make sure that the power to any device that you connect to the installation has been turned off. You must unplug the power cords of any computers that have the *Keyboard Power On* function.

2. Make sure that all devices you will be installing are properly grounded.

Single Stage

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

1. Use a male-to-male DVI cable to connect your source device's DVI port to the VS162 / VS164's Video In port.

2. Use a male-to-male audio cable to connect your source device's speaker port to the VS162 / VS164's Audio In port.

3. Plug your DVI monitors and speakers into the A/V Out ports.

4. Plug the power adapter that came with your switch into an AC power source, then plug the power adapter cable into the switch's Power Jack.
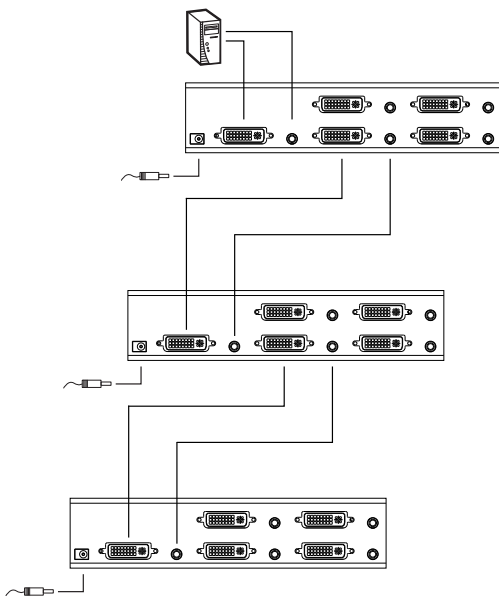
Cascading

To provide even more audio/video display, additional units can be cascaded from the VS162 / VS164's A/V Out ports. Simply use additional male to male DVI and audio cables to connect an A/V Out port on the parent splitter to the A/V In port of the child splitter.

Recommended distances between devices in all cascade levels for transmitting a high resolution signal are as follows:

Source to VS162 / VS164: 1.8 m

VS162 / VS164 to VS162 / VS164: 5 m

VS162 / VS164 to display: 5 m

Specifications

Function		VS162	VS164
Computer Connections		2	4
Connectors	Video In	1 x DVI port (F)	
	Audio In	1 x Audio jack	
	Video Out	2 x DVI ports (F)	4 x DVI ports (F)
	Audio Out	2 x Audio jacks	4 x Audio jacks
	Power	1 x DC jack	
LEDs	Activity	1	
	Power	1	
Resolution		Up to 1920 x 1200; DDC2B	
Power Consumption		DC5.3V, 2.4W	DC5.3V, 4.0W
Signal Range		5 m (15 ft)	
Environment	Operating Temp.	0–50ºC	
	Storage Temp.	-20–60ºC	
	Humidity	0–80% RH, Non-condensing	
Physical Properties	Housing	Metal	
	Weight	0.62 kg	0.72 kg
	Dimensions (L x W x H)	21.0 x 8.8 x 5.55 cm	

DVI Pin Assignments

Pin	Signal	Pin	Signal
1	TMDS Data2-	16	Hot Plug Detect
2	TMDS Data2+	17	TMDS Data0-
3	GND	18	TMDS Data0+
4	N.C.	19	GND
5	N.C.	20	N.C.
6	DDC Clock	21	N.C.
7	DDC Data	22	TMDS Clock Shield
8	Analog Vertical Sync.	23	TMDS Clock+
9	TMDS Data1-	24	TMDS Clock-
10	TMDS Data1+	C1	Analog Red
11	GND	C2	Analog Green
12	N.C.	C3	Analog Blue
13	N.C.	C4	Analog H. Sync.
14	+5V Power	C5	Analog Ground (Analog R, G, B Return)
15	Ground (return for +5V, H Sync., and V Sync.)		

Symptom	Possible Cause	Action
Erratic behavior.	Unit not receiving enough power.	Use a DC 5.3V power adapter if you are not already using one. If you are already using a power adapter, check that it matches the system specifications (DC 5.3V), and that it is functioning properly.
Video doesn't display on some ports.	DVI specification of the source device doesn't match the DVI specification of the DVI cable and/or the DVI display device.	There are three DVI standards: DVI-A; DVI-D; and DVI-I. Make sure that the DVI specifications of the source device, cable and monitor all match.\n\n**Note:** Some monitors are able to support multiple DVI signals.
		DVI-D only supports resolutions up to 1280 x 1024
	No DDC2B monitor on Port 1.	Since Port 1 is the port that supports DDC2B, there must be a monitor that supports DDC2B on Port 1.
	Port 1 monitor resolution set too high.	The resolution of the monitor on Port 1 must not exceed the maximum resolution of any of the other monitors.
	Port 1 monitor resolution not supported by other monitors.	The monitor on Port 1 must be set to a resolution that the other monitors support.
	Mixing of Apple Cinema Display and LCD monitors.	The monitors must all be Apple Cinema Display monitors, or all LCD monitors.

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.