



## **4-Port True 4K HDMI Switch with Dual Output VS482B User Manual**



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## EMC Information

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### 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.

### KCC Statement

유선 제품용 / A 급 기기 ( 업무용 방송 통신 기기 )  
이 기기는 업무용 ( A 급 ) 전자파적합기기로서 판매자 또는 사용자는 이  
점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로  
합니다.

## RoHS

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This product is RoHS compliant.



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## User Information

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### Online Registration

Be sure to register your product at our online support center:

International	<a href="http://eservice.aten.com">http://eservice.aten.com</a>
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### Telephone Support

For telephone support, call this number:

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

### User Notice

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Any of the manufacturer's software described in this manual is sold or licensed *as is*. Should the programs prove defective following their purchase, the buyer (and not the manufacturer, its distributor, or its dealer), assumes the entire cost of all necessary servicing, repair and any incidental or consequential damages resulting from any defect in the software.

The manufacturer of this system is not responsible for any radio and/or TV interference caused by unauthorized modifications to this device. It is the responsibility of the user to correct such interference.

The manufacturer is not responsible for any damage incurred in the operation of this system if the correct operational voltage setting was not selected prior to operation. PLEASE VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.

## Package Contents

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- ♦ 1 VS482B 4-Port True 4K HDMI Switch with Dual Output
- ♦ 1 IR Remote Control Unit
- ♦ 1 Power Adapter
- ♦ 1 Mounting kit
- ♦ 1 User Instructions\*

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- Note:**
1. Make sure that all the components are present and in good order. If anything is missing or was damaged in shipping, contact your dealer.
  2. 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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## About this Manual

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This User Manual is provided to help you get the most from your VS482B system. It covers all aspects of installation, configuration and operation. An overview of the information found in the manual is provided below.

**Chapter 1, Introduction,** introduces you to the VS482B system. Its purpose, features and benefits are presented, and its front and back panel components are described.

**Chapter 2, Hardware Setup,** describes how to set up your VS482B installation and all necessary steps are provided.

**Chapter 3, Operation,** explains the fundamental concepts involved in operating the VS482B via the front panel pushbuttons, remote control, RS-232 serial interface and OSD menu. In addition, Switch Modes, Audio Return Channel (ARC) and RS-232 commands are discussed in detail.


**Chapter 4, The Firmware Upgrade Utility,** explains how to download the VS482B's firmware and upgrade the device using the utility.

**An Appendix,** provides specifications and other technical information regarding the VS482B.

## Conventions

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This manual uses the following conventions:

- |   |  |
|---|--|
| <code>Monospaced</code>   | Indicates text that you should key in.   |
| [ ]   | Indicates keys you should press. For example, [Enter] means to press the <b>Enter</b> key. If keys need to be chorded, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt]. |
| 1.  | Numbered lists represent procedures with sequential steps.   |
| ◆   | Bullet lists provide information, but do not involve sequential steps.   |
| →   | Indicates selecting the option (on a menu or dialog box, for example), that comes next. For example, Start → Run means to open the <i>Start</i> menu, and then select <i>Run</i> .                         |
|  | Indicates critical information.  |

## Product Information

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For information about all ATEN products and how they can help you connect without limits, visit ATEN on the Web or contact an ATEN Authorized Reseller. Visit ATEN on the Web for a list of locations and telephone numbers:

International	<a href="http://www.aten.com">http://www.aten.com</a>
North America	<a href="http://www.aten-usa.com">http://www.aten-usa.com</a>



# Chapter 1

## Introduction

### Overview

---

The ATEN VS482B Switch is an ideal solution for application requiring superior video resolution of True 4K when connecting 4 HDMI A/V sources to 2 HDMI displays. Complying with HDMI 2.0 standards, the switch's Audio Return Channel (ARC) function allows users to send audio without having to attach a separate audio cable.

Furthermore, the VS482B offers switching methods between HDMI sources by front panel pushbuttons, IR remote control and RS-232 commands, enabling users to effortlessly select desired input. Equipped with EDID Expert™, the VS482B benefits users with optimum EDID settings for smooth power-up and highest-quality display across different screens. Featuring above functionalities provides you a practical solution for auditorium, home theater, meeting rooms, trade shows, shopping centers, and more.

## Features

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- ♦ Allows up to 4 HDMI A/V sources to be connected to 2 HDMI displays
- ♦ Superior video quality – up to 4096 x 2160 / 3840 x 2160 @ 60Hz (4:4:4); HDR supported
- ♦ HDMI 2.0 (3D, Audio Return Channel, Deep Color); HDCP 2.2 compliant
- ♦ Supports Auto Switch – the VS482B automatically switches to a newly plugged-in source
- ♦ Audio Return Channel (ARC) function – connects an HDMI cable to the ARC port to send audio from your source device to your audio/video receiver
- ♦ OSD for system configuration settings and information display
- ♦ Switching between HDMI input sources via front panel pushbuttons, IR remote control and RS-232 commands
- ♦ EDID Expert™ – selects optimum EDID settings for smooth power-up, high-quality display, and use of the best resolution across different screens
- ♦ Built-in bi-directional RS-232 serial control port for high-end system control
- ♦ HDMI audio can be extracted to stereo audio and digital audio (optical/coaxial) outputs
- ♦ Supports 5.1 channel audio output
- ♦ Supports Consumer Electronic Control (CEC)
- ♦ Rack mountable

## Requirements

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The following equipment is required for a complete VS482B installation:

### **Source Device**

- ♦ HDMI Type A output connector(s)

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

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### **Display Device**

- ♦ Up to 2 display devices or receivers with an HDMI Type A input connector

### **Cables**

- ♦ 4 HDMI cables

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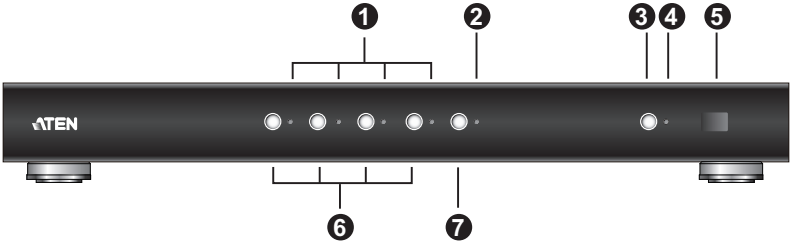
**Note:** 1. No cables are included in this package. We strongly recommend that you purchase high-quality cables of appropriate length since this will affect the quality of the audio and video display. Contact your dealer to purchase the correct cable sets.

2. If you wish to utilize the VS482B's high-end serial controller function, you will also need to purchase an appropriate RS-232 cable. See *Installing the RS-232 Controller*, page 10.

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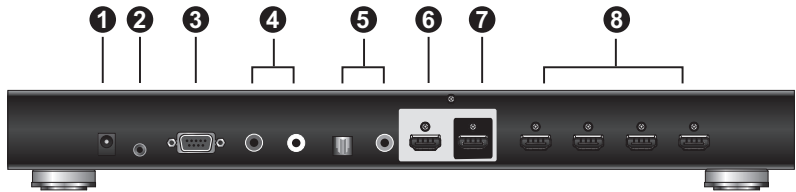
# Components

## VS482B Front View



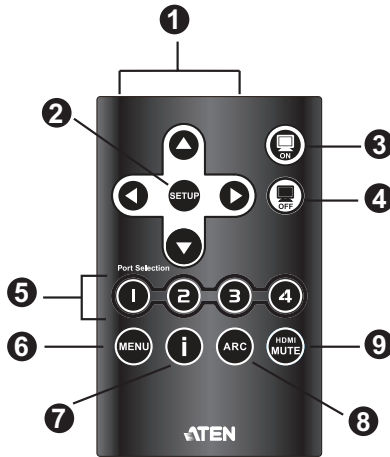
No.	Component	Description
1	Port LEDs	The selected port's LED (green) lights up to indicate that the port is selected.
2	ARC LED	The LED (blue) lights up when the ARC function is enabled.
3	Power Pushbutton	Press this button to turn on / off the switch.
4	Power LED	<ul style="list-style-type: none"><li>◆ The LED (green) lights up when the switch is powered on.</li><li>◆ The LED (orange) lights up to indicate that the switch is in standby mode.</li></ul>
5	IR Receiver	This receives signals from the IR remote control.
6	Port Selection Pushbuttons	Pressing a port selection pushbutton routes the A/V source from the corresponding input port to the output port for display.
7	ARC button	Press this button to enable / disable the ARC function.

**VS482B Rear View**



No.	Component	Description
1	Power Jack	The power adapter cable plugs in here.
2	IR EXT (Extender) Port	Connect the IR Extender to this port. <b>Note:</b> The IR receiver can be purchased separately.
3	RS-232 Serial Port	This is the serial remote port for input source selection and high-end system control, including firmware upgrade.
4	Stereo Audio Out Ports	The red port is for the right audio channel, and the white port is for the left audio channel.
5	Digital Audio Out Ports	Connect the optical and coaxial audio cables to these ports.
6	HDMI Out Port (port 2)	The cable from the HDMI display or receiver device plugs in here.  <b>Note:</b> The ARC audio signal will be transmitted when the ARC is enabled. For more information, see <i>Enabling ARC</i> , page 14.
7	HDMI Out Port (port 1) (ARC In)	♦ The cable from the HDMI display device or receiver plugs in here. ♦ Connect the ARC audio input connector or receiver to this port. The ARC audio can be transmitted back (to audio receivers) through this connectivity
8	HDMI In Ports	The cables from the HDMI source devices can plug into any of four available ports.

**IR Remote Control**



No.	Component	Description
1	Up / Down / Left / Right Arrows	Press the Up / Down / Left / Right button to cycle through the OSD menu/selection.
2	Setup	Press this to confirm the selection on the OSD screen.
3	On	Press this to power on the display.
4	Off	Press this to power off the display.
5	Port Selection Buttons 1~4	Press a button to bring the focus directly to the source device attached to its associated port.
6	Menu	Press this to open / close the OSD menu.
7	Info button	Press this button to display information about the source device on the upper left side of the screen. The information can include: Source port number; Source port number + Source Type; or turned off.
8	ARC	Enable / Disable ARC function. See <i>ARC Commands</i> , page 24.
9	HDMI Mute	Enable / Disable audio for the HDMI output port. See <i>Switch Mode</i> , page 12.

## Chapter 2

# Hardware Setup



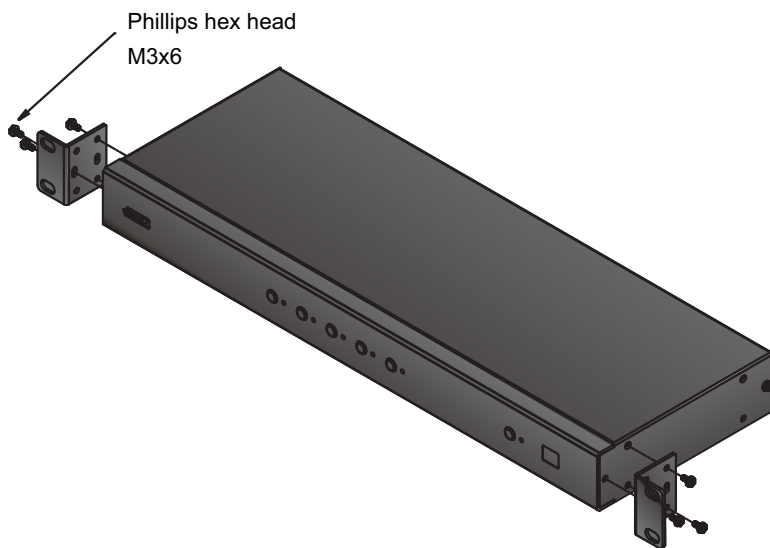
1. Important safety information regarding the placement of this device is provided on page 41. Please review it before proceeding.
2. Make sure that the power to all devices connected to the installation are turned off.
3. Make sure that all devices you will be installing are properly grounded.

### Rack Mounting

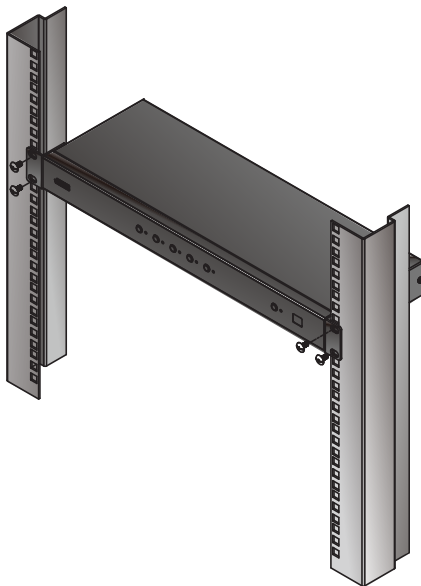
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For convenience and flexibility, the VS482B can be mounted on system racks. To rack mount a unit do the following:

1. Using the screws provided in the Mounting Kit, screw the mounting bracket to the side of the unit as show in the diagram below:



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



---

**Note:** These screws are not provided. We recommend that you use M5 x 12 Phillips Type I cross, recessed type screws.

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## **Grounding**

To prevent damage to your installation it is important that all devices are properly grounded.

1. Use a grounding wire to ground the VS482B by connecting one end of the wire to the grounding terminal, and the other end of the wire to a suitable grounded object.
2. Make sure that the devices that the VS482B connects to are properly grounded.



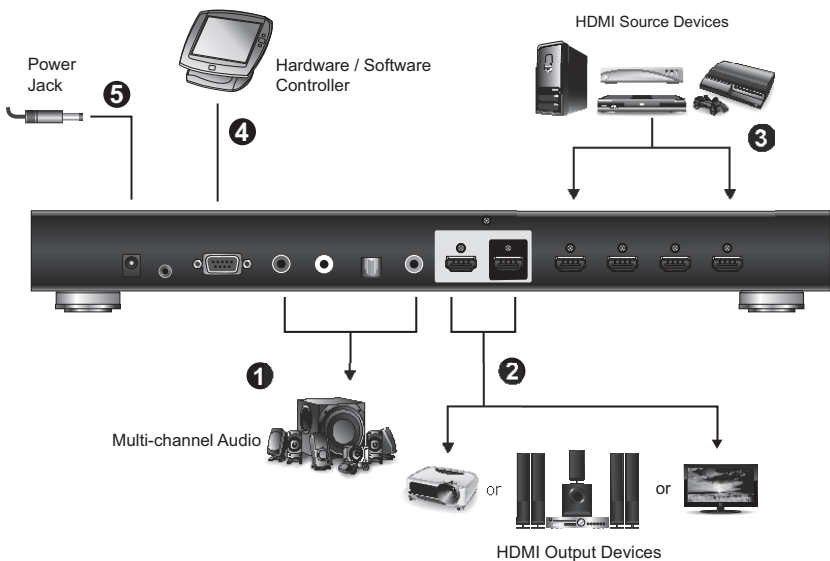
## Installation

Installation of the VS482B is simply a matter of plugging in the appropriate cables.

### **VS482B Installation**

To install the switch, refer to the installation diagram below as you perform the following steps:

1. Connect your audio devices (such as speakers or AVRs) to the Stereo Audio Out Ports or Digital Audio Out Ports.
2. Use an HDMI cable to connect the HDMI Input port on the video display device to the HDMI Out Ports on the back of the VS482B.
3. Use HDMI cables to connect the HDMI Output ports on the source device(s) to the HDMI In Ports on the back of the VS482B.
4. (Optional) To edit the VS482B system settings through the RS-232 Serial Port, connect the hardware / software controller here.
5. Plug the provided power adapter into an appropriate AC power source; plug the power adapter cable into the Power Jack on the back of the VS482B.
6. Power on the VS482B, 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 VS482B, use a serial cable such as a modem cable. The end connecting to the VS482B should have a 9-pin male connector. Connect this to the serial interface on the rear of the VS482B. Refer to number **5** on the previous diagram.

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**Note:** To configure the controller serial port, see page 16.

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# Chapter 3

## Operation

### Overview

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The 4-Port True 4K HDMI Switch with Dual Output offers easy and flexible source device selection with either the front panel pushbuttons, remote control, or through the RS-232 serial interface, and system settings via OSD menu.

- 
- Note:** 1. Whenever the VS482B is powered on and there is no video input source connected, it automatically selects Port 1 as the active port (i.e., the Port 1 LED lights up). You may choose one of the methods outlined below to select a different port as your active port.
2. The VS482B takes about 10-20 seconds to boot up and apply system configuration settings when first powered on.
- 

### Manual Port Selection

To select an HDMI source device, press the pushbutton on the front panel that corresponds to the port to which the device is connected.

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

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### Remote Control Selection

To select a source device with the remote control, press the number button that corresponds to the port which the HDMI device is connected.

See *IR Remote Control*, page 6 for more details.

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**Note:** Aim the remote control at the IR receiver located on the front panel of the VS482B. For optimum performance, make sure there is a clear line-of-sight between the remote control unit and the IR receiver.

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## Switch Mode

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You can choose how the VS482B behaves when a new input source is connected. The switch modes can be set via RS-232 commands (see *Switch Mode Commands*, page 19) by connecting a computer or hardware controller to the VS482's RS-232 port. If you are using a computer you can download the RS-232 AP GUI from our website to configure these additional settings. There are three Switch Modes as follows:

- ♦ **Default** – The switch behaves normally without automatic switching operation.
- ♦ **Next** – Switch priority is placed on the next port that has a new source connected to it (default).
- ♦ **Auto** – Places priority on a selected port so that when a source is connected to the said port, the VS482B automatically switches to it, and the port can not be changed until the source is unplugged or auto switching is disabled.

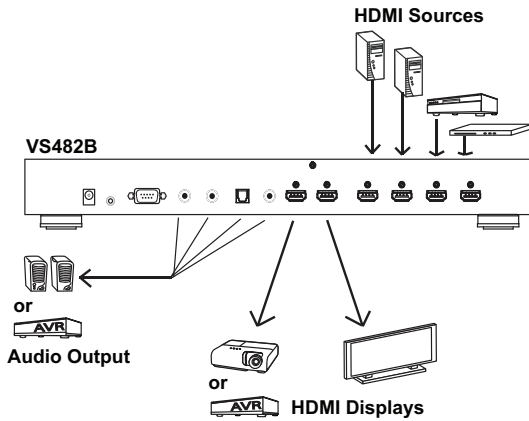
In addition, the **Go To** function, which can be turned On or Off via RS-232 commands, enables the VS482B to switch to the next port with a powered on source device when the current input source is off. Refer to *Switch Mode Commands*, page 19 for more details.

## Audio Return Channel (ARC)

Audio Return Channel (ARC) allows an HDMI source device that receives content via air waves (such as a TV or STB connected to a satellite antenna) to send audio “upstream” to your HDMI display devices using only one HDMI cable.

### Initial Setup

The VS482B supports dual HDMI outputs for HDTVs and/or audio/video receiver (AVR) applications, as shown in the following diagram.



The audio/video coming from the HDMI sources (Blu-ray, DVD, etc.) are received by the VS482B and then passed on to the HDMI displays (TV, projector or AVR).

However if the HDMI audio or video is coming from the TV (through a satellite antenna or STB), you can enable ARC so that audio is sent to the AVR/HDMI receiver through the HDMI cable or the device(s) connected to the audio output port(s). See p. 14 for the diagram.

- Note:**
1. Without ARC, you must connect another cable, specifically for passing audio, from the TV to the AVR or the device(s) connected to the audio output port(s).
  2. The ARC function requires an HDTV built-in ARC function and must be connected to the correct HDMI output port. Check your HDTV's user manual for this information.

## Enabling ARC

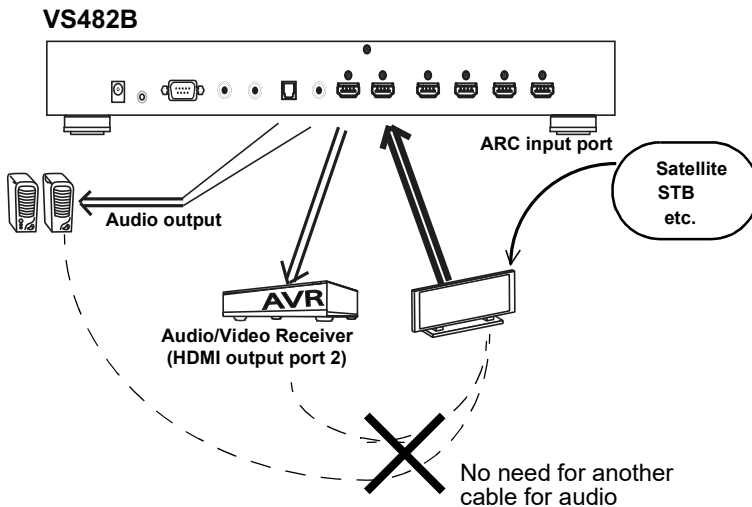
With ARC enabled, the TV can act as the HDMI source and send audio “upstream” to the AVR or speakers connected to the HDMI output ports of the VS482B.

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**Note:** The HDMI output port 1 is also the ARC input port, depending on whether the ARC feature is enabled or disabled. See *ARC Commands*, page 24 for more information.

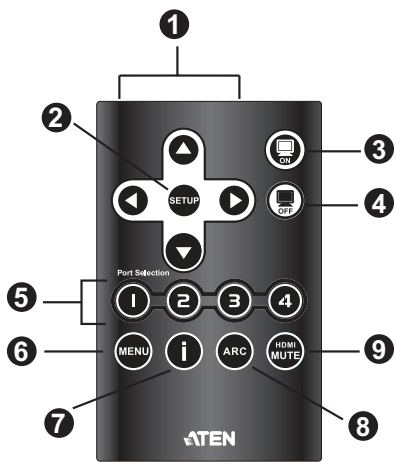
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In the following diagram, audio from the TV goes to the VS482B through the ARC Input port, and is then passed on to the AVR via the HDMI cable or the audio devices connected to the HDMI output ports. A user can also connect to an audio device (receiver) using an optical or coaxial audio connector.



- 
- Note:** 1. The scenario above works only if the TV supports HDMI and has ARC enabled.
2. The ARC LED (blue) lights up to indicate that the ARC function is enabled. There is no audio output if your HDTV does not support ARC function or if the ARC function is not enabled.
-

# IR Command Code



- ◆ Carry Frequency: 38KHz
- ◆ IR Protocol: NEC
- ◆ Customer Code: 00FD
- ◆ Data Code:

Function	Data Code
Up	10
Left	1D
Down	02
Right	0C
Setup	19
ON	12
OFF	0E
Port 1	04
Port 2	05
Port 3	06
Port 4	1E
MENU	07
Info	08
ARC	09
HDMI MUTE	1B

## RS-232 Serial Interface

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The VS482B'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

These actions can also be performed by keying the command into the text box, and clicking **Send**.

The formula for Switch commands is as follows:

**Switch Command + Input Command + Port number [Enter]**

1. For example, to switch input port to port 02, type the following:  
**sw i02 [Enter]**
2. To switch to the next port, input the following:  
**sw + [Enter]**
3. To turn off video output, type the following:  
**sw + off [Enter]**

The following tables show the possible values for the **Switch Port** string:

Command	Description
sw	Switch command

Input Command	Description
i	Input command



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

Control	Description
on	Turn on the display
off	Turn off the display
+	Next Port
-	Previous Port

The following table shows the available command list:

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

- 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.

## **Standby/Power Commands**

The Standby/Power feature enables the VS482B to enter power saving mode.

The formula for Standby/Power commands is as follows:

**Standby + Control command [Enter]**

1. For example, to disable the Standby/Power feature, input the following:  
**standby off [Enter]**

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

Command	Description
standby	Standby/Power command

Control	Description
on	Turn on power saving mode
off	Turn off power saving mode

The following table shows the available command list:

Command	Control	Enter	Description
standby	on	[Enter]	Power saving mode on
standby	off	[Enter]	Power saving mode off

## Switch Mode Commands

You can choose how the VS482B 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 VS482B 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 VS482B to switch to the next port with a powered on source device when the current input source device is powered off.

The formula for Switch Mode commands is as follows:

**Switch Command + Input Command + Port Number + Control + [Enter]**

1. For example, to enable auto switching for port 02, type the following:  
**swmode i02 auto [Enter]**
2. To enable the auto switch next mode, type the following:  
**swmode next [Enter]**
3. To turn auto switching off, type the following:  
**swmode default [Enter]**
4. To enable the Go To function, type the following:  
**swmode goto on [Enter]**

The following tables show the possible values for the **Switch Mode** string:

Command	Description
swmode	Switch Mode command
Input Command	Description
i	Input command
Port number	Description
xx	01-04 port (default is 01)

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

The following table shows the available command list:

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

## EDID Commands

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. You can set up which EDID mode the VS482B uses with the following command:

**EDID Command + Control (port1 / auto / default) [Enter]**

1. For example, to use the Port1 EDID setting, type the following:

**edid port1 [enter]**

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

Command	Description
edid	Enable EDID selection
Control	Description
port1	Implement the EDID of the connected display to Port 1, and pass it to the video source
remix	Implement the EDID of all connected displays. The VS482B uses the best resolution for all displays.
default	Implements ATEN's default EDID (default).

The following table shows the available command list:

Command	Control	Enter	Description
edid	port1	[Enter]	The EDID from Port 1 is passed to the video source
edid	remix	[Enter]	The VS482B implements the EDID of all connected displays and uses the best resolution for all displays (default)
edid	default	[Enter]	ATEN's default EDID is passed to the video source

## **CEC Commands**

Consumer Electronics Control (CEC) allows interconnected HDMI devices to communicate and respond to one remote control. The formula for CEC mode selection commands is as follows:

**CEC Command + Control (Off / Auto / Port1) [Enter]**

1. For example, to use the Port1 CEC setting, type the following:

**cec port1 [enter]**

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

Command	Description
cec	Enable CEC selection

Control	Description
off	Disable CEC (default)
auto	Apply the video source's CEC to all display output
port1	Apply the video source's CEC only to port 1

The following table shows the available command list:

Command	Control	Enter	Description
cec	off	[Enter]	CEC off (default)
cec	auto	[Enter]	Connect the video source's CEC with all display output
cec	port1	[Enter]	Apply the video source's CEC only to port 1

**Mute Commands**

Enable or disable audio coming from the output port(s) using the following command:

**Mute Command + Control (On / Off) [Enter]**

- 1. For example, to mute the audio, type the following:

**mute on [enter]**

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

Command	Description
mute	Enable / Disable audio of HDMI output port

Control	Description
on	Mute on; audio from HDMI output port is disabled
off	Mute off; audio output enabled (default)

**Note:** Each command string can be separated with a space.

The following table shows the available command list:

Command	Control	Enter	Description
mute	on	[Enter]	Mute on (no audio)
mute	off	[Enter]	Mute off (audio out)

## **ARC Commands**

Audio Return Channel (ARC) allows a source device (TV, STB, etc.) to send audio “upstream” to an audio/video receiver using only one HDMI cable. The formula for enabling/disabling ARC is as follows:

**ARC Command + Control (On / Off) [Enter]**

1. For example, to enable ARC, type the following:

**arc on [enter]**

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

Command	Description
arc	Enable / Disable ARC

Control	Description
on	ARC on; output audio passes from HDMI output port 1 to HDMI output port
off	ARC is disabled (default)

The following table shows the available command list:

Command	Control	Enter	Description
arc	on	[Enter]	ARC on
arc	off	[Enter]	ARC off



## **Echo**

The Echo function lets the VS482B perform front panel and IR control operations, but not commands received through the RS-232 interface.

The formula for the Echo command is as follows:

**Echo Command + Control (on/off) + [Enter]**

1. For example, to enable the Echo function, type the following:

**echo on [enter]**

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

Command	Description
echo	Enable / Disable Echo function

Control	Description
on	Echo function on
off	Echo function off (default)

The following table shows the available command list:

Command	Control	Enter	Description
echo	on	[Enter]	Echo on
echo	off	[Enter]	Echo off

## **Reset**

You can reset the VS482B to default factory settings. The formula for the Reset command is as follows:

**Reset Command [Enter]**

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

Command	Description
reset	Reset the device settings

The following table shows the available command list:

Command	Enter	Description
reset	[Enter]	Reset the device settings

## **Baud Rate Setting**

You can select the RS-232 Baud Rate you want the VS482B to use. Options are 9600, 19200 (default) 38400 and 115200.

The formula for Baud Rate setting command is as follows:

**Baud Command + Control [Enter]**

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

**baud 38400 [enter]**

The following tables show the possible values for the **Baud Rate** string

Command	Description
baud	Sets the RS-232 baud rate

Control	Description
9600	Use 9600 baud rate
19200	Use 19200 baud rate
38400	Use 38400 baud rate
115200	Use 115200 baud rate

The following table shows the available command list:

Command	Control	Enter	Description
baud	9600 / 19200 / 38400 / 115200	[Enter]	Sets the RS-232 baud rate

## **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**





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If you power off the VS482B, follows these steps before powering it on again:

1. Power off the attached devices.
2. Unplug the power adapter cable from the VS482B.
3. Wait 10 seconds, and then plug the power adapter cable back in.
4. After the VS482B is powered on, power on the attached devices.

## OSD Menu

Use the **MENU** pushbutton on the remote control to view the OSD menu and cycle through the options in the order shown in the table below. See *IR Remote Control*, page 6 for details on how to use the remote control.

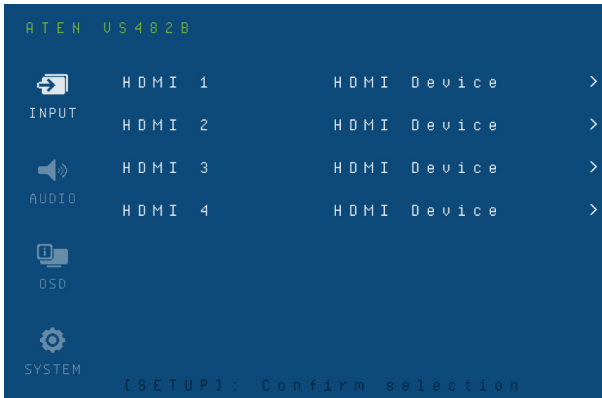
Menu Page	Sub-Menu Page(s)	
Input Setting 	HDMI 1	<b>HDMI device</b> / Blu-ray player / DVD player / Game Console / Set Top Box / Portable Device / PC
	HDMI 2	<b>HDMI device</b> / Blu-ray player / DVD player / Game Console / Set Top Box / Portable Device / PC
	HDMI 3	<b>HDMI device</b> / Blu-ray player / DVD player / Game Console / Set Top Box / Portable Device / PC
	HDMI 4	<b>HDMI device</b> / Blu-ray player / DVD player / Game Console / Set Top Box / Portable Device / PC
Audio Setting 	ARC	<b>Disable</b> / Enable
	Audio Channel	<b>AUTO</b> / Stereo / 5.1 Channel
	HDMI Audio Output	<b>On</b> / Off
OSD Setting 	Message Display Mode	<b>Channel</b> / Full / Off
	Transparency	0 ~100 (default is <b>75</b> )
System Setting 	EDID	<b>Default</b> / Port1 / Remix
	CEC	<b>Off</b> / Auto / Port1
	Reset to Default	<b>On</b> / Off
	Version	Version Number

**Note:** 1. The highlighted texts indicate the VS482BB's default setting.

2. The OSD function is disabled while 3D content is being displayed. Switch to 2D content or a different input port to enable the OSD.

## Input Setting Menu

Use this screen to select the video source device(s) for the HDMI input port(s).



1. Use the drop-down menu to select a video source device for HDMI 1 input port. Options are as follows.




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**Note:** The default value **HDMI Device** does not point to any device. It means there is no video source selected for that HDMI input port.

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2. Do the same for HDMI 2, HDMI 3 and HDMI 4 input ports.

## Audio Setting

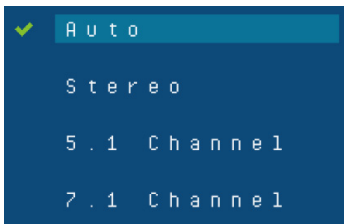
Use this screen to configure the VS482B audio settings.



1. Use the drop-down menu to **Enable** or **Disable** ARC on the VS482B. See *Audio Return Channel (ARC)*, page 13 for more details on this feature.



2. Use the drop-down menu to select which audio channel receiver the VS482B uses. The default value is **Auto**.

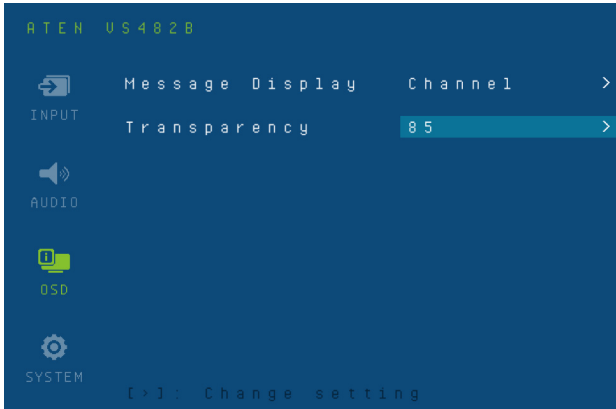


3. Use the drop-down menu to turn on/off the audio coming from the HDMI output port(s). Select **On** to enable audio from the active HDMI output port, and select **Off** to disable it.

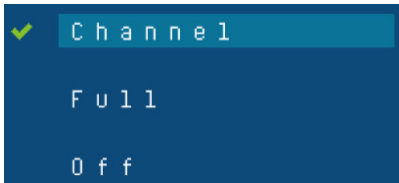


## OSD Setting

Use this screen to configure the VS482B OSD settings.

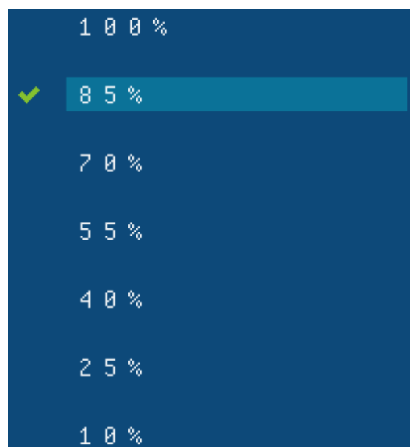


1. Use the drop-down menu to select which display mode the VS482B uses to display information in the upper left corner of the screen. Options are as follows.



- ♦ **Channel** - This shows the source port number.
- ♦ **Full** - This shows the source port number and source type. See *Input Setting Menu*, page 29 for the list of source types.
- ♦ **Off** - There is no information shown.

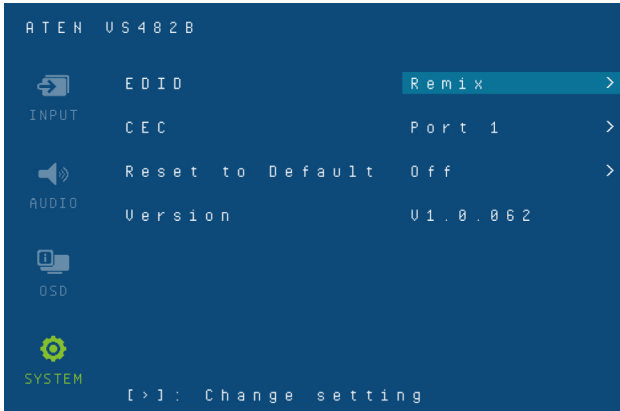
2. Select the visibility of the OSD menu when it is invoked. Press the menu button to enter the adjustment menu. Use the drop-down menu to select a value. The value 100 shows a fully visible and opaque OSD menu. The default value is **85**.



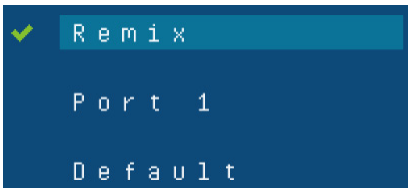


## System Setting

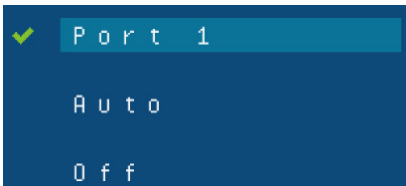
Use this screen to configure the VS482B system settings.



1. Use the drop-down menu to set up which EDID mode the VS482B uses. See *Verification*, page 27 for more details.



2. Use the drop-down menu to select how the video source's CEC is applied. See *Verification*, page 27 for more details.



3. Set this to **On** to have the VS482B return to default settings when it is reset. Otherwise, select **Off**.



4. This read-only field shows the firmware version of the VS482B.

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# Chapter 4

## The Firmware Upgrade Utility

### Introduction

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The purpose of the Windows-based Firmware Upgrade Utility is to provide an easy process for upgrading the VS482B. The program comes as part of a Firmware Upgrade Package that is specific for each device.

As new firmware versions become available, new firmware upgrade packages are posted on our website. Check the website regularly to find the latest information and packages.

### Downloading the Firmware Upgrade Package

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To download the firmware upgrade package:

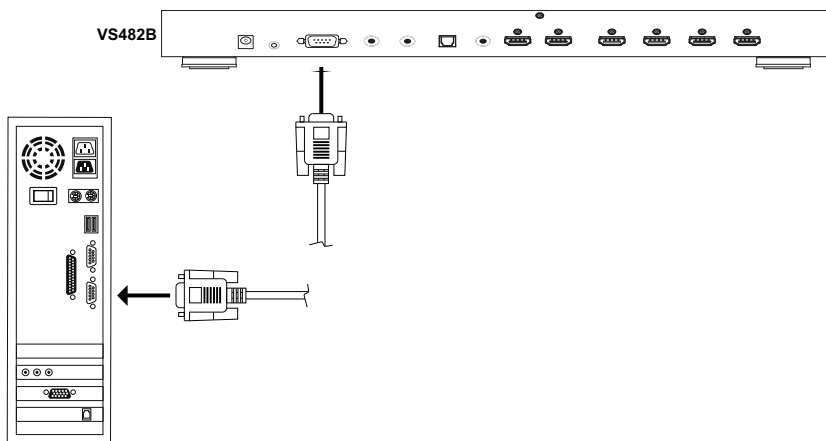
1. On our Website go to: *Download - Firmware* and choose the device model, or from the VS482B product page under the *Resources* tab, select *Firmware*. A list of available firmware upgrade packages appears.
2. Choose the firmware upgrade package that you wish to install (usually the most recent) and download it to your computer.

## Preparation

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To prepare for the firmware upgrade, do the following:

1. Use an RS-232 cable to connect a COM port on your computer to the *RS-232 Serial Port* of your VS482B.



2. Unplug the VS482B's power adapter.
3. Hold-down front panel pushbutton 1 and plug the power adapter into the VS482B to power the unit.
4. If successful, the port 1 LED will start flashing and you can start the upgrade process as explained on the next page.

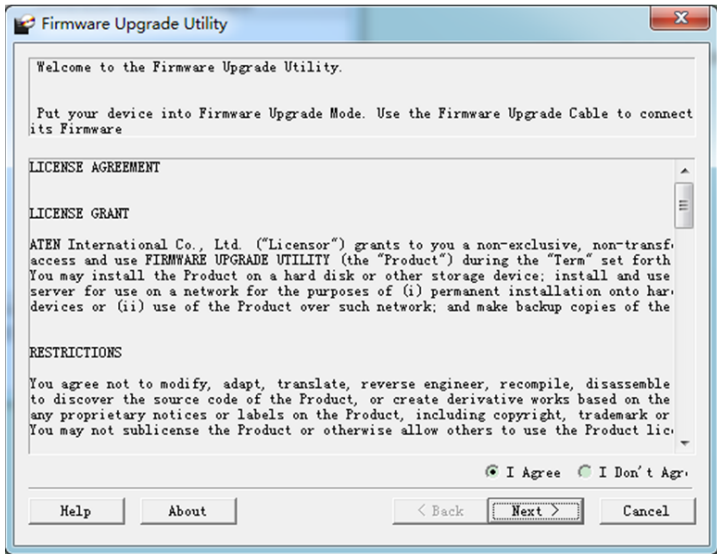
## Starting the Upgrade

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To upgrade the firmware:

1. Run the downloaded firmware upgrade package file either by double-clicking the file icon, or by opening a command line and entering the full path to it.

The *Firmware Upgrade Utility* welcome screen appears:



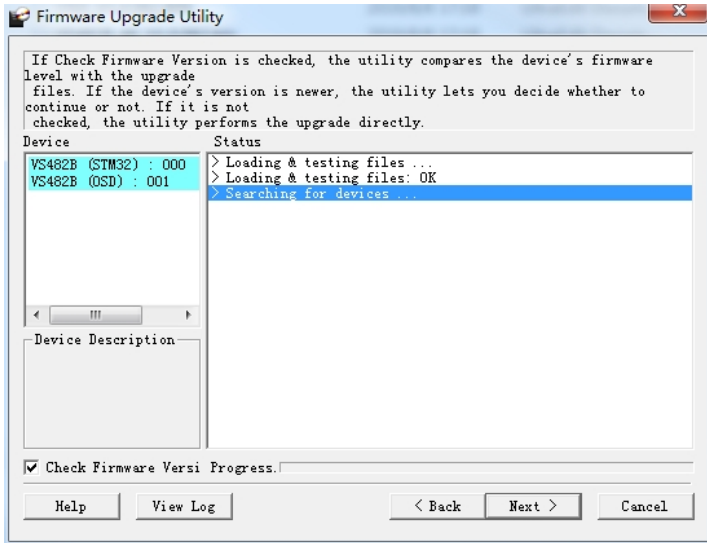
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**Note:** The screens shown in this section are for reference only. The wording and layout of the actual screens put up by the *Firmware Upgrade Utility* may vary slightly from these examples.

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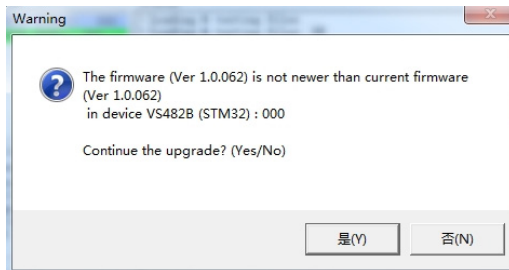
2. Read and *Agree* to the License Agreement (click the **I Agree** radio button).

- Click **Next** to continue. The *Firmware Upgrade Utility* main screen appears. The devices capable of being upgraded are listed in the *Device List* panel:



- Click **Next** to perform the upgrade. The Port LEDs 1, 3, and 4 will flash while the upgrade is in process.

If you enabled *Check Firmware Version*, the Utility compares the device's firmware level with that of the upgrade files. If it finds that the device's version is higher than the upgrade version, it brings up a dialog box informing you of the situation and gives you the option to continue or cancel.

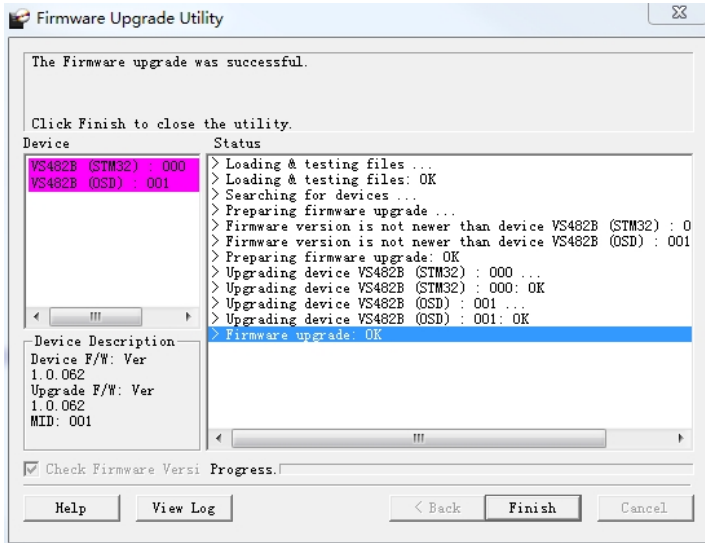


If you didn't enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether they are a higher level, or not.

Status messages appear in the *Status Messages* panel, and the progress toward completion is shown on the *Progress* bar.

## Upgrade Succeeded

After the upgrade has completed, all port LEDs will stop flashing and a screen appears to inform you that the procedure was successful:



Click **Finish** to close the *Firmware Upgrade Utility*.

## Upgrade Failed

If the *Upgrade Succeeded* screen doesn't appear, it means that the upgrade failed to complete successfully. See the next section, *Firmware Upgrade Recovery*, for how to proceed.

## Firmware Upgrade Recovery

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There are three conditions that call for firmware upgrade recovery:

- ♦ When a firmware upgrade is manually aborted.
- ♦ When the mainboard firmware upgrade fails.
- ♦ When the I/O firmware upgrade fails.

To perform a firmware upgrade recovery, do the following:

1. Power off the device.
2. Connect the RS-232 cable to the *RS-232 Serial Port*.
3. Repeat the upgrade procedure.



## Safety Instructions

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### General

- ♦ Read all of these instructions. Save them for future reference.
- ♦ Follow all warnings and instructions marked on the device.
- ♦ This product is for indoor use only.
- ♦ Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- ♦ Do not use the device near water.
- ♦ Do not place the device near, or over, radiators or heat registers.
- ♦ The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- ♦ The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- ♦ Never spill liquid of any kind on the device.
- ♦ Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- ♦ The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- ♦ The device is designed for IT power distribution systems with 230V phase-to-phase voltage.
- ♦ To prevent damage to your installation it is important that all devices are properly grounded.
- ♦ The device is equipped with a DC adapter. This is a safety feature.
- ♦ To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or un-interruptible power supply (UPS).
- ♦ Position system cables and power cables carefully; Be sure that nothing rests on any cables.

- ♦ Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.
- ♦ Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.
- ♦ If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
  - ♦ Liquid has been spilled into the device.
  - ♦ The device has been exposed to rain or water.
  - ♦ The device has been dropped, or the cabinet has been damaged.
  - ♦ The device exhibits a distinct change in performance, indicating a need for service.
  - ♦ The device does not operate normally when the operating instructions are followed.
- ♦ Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.

## **Rack Mounting**

- ♦ Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- ♦ Always load the rack from the bottom up, and load the heaviest item in the rack first.
- ♦ Make sure that the rack is level and stable before extending a device from the rack.
- ♦ Use caution when pressing the device rail release latches and sliding a device into or out of a rack; the slide rails can pinch your fingers.
- ♦ After a device is inserted into the rack, carefully extend the rail into a locking position, and then slide the device into the rack.
- ♦ Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- ♦ Make sure that all equipment used on the rack – including power strips and other electrical connectors – is properly grounded.
- ♦ Ensure that proper airflow is provided to devices in the rack.
- ♦ Ensure that the operating ambient temperature of the rack environment does not exceed the maximum ambient temperature specified for the equipment by the manufacturer.
- ♦ Do not step on or stand on any device when servicing other devices in a rack.

## Technical Support

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### International

- ♦ For online technical support – including troubleshooting, documentation, and software updates: <http://support.aten.com>
- ♦ For telephone support, see *Telephone Support*, page iii:

### North America

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 4988

When you contact us, please have the following information ready beforehand:

- ♦ Product model number, serial number, and date of purchase
- ♦ Your computer configuration, including operating system, revision level, expansion cards, and software
- ♦ Any error messages displayed at the time the error occurred
- ♦ The sequence of operations that led up to the error
- ♦ Any other information you feel may be of help

## Specifications

Function			VS482B
Display Connections			2
Connectors	Video Input	Interfaces	4 x HDMI Type A Female (Black)
		Impedance	100 Ω
		Max. Distance	3 m (4096 x 2160 @ 60Hz, 4:4:4)
	Video Output	Interfaces	2 x HDMI Type A Female (Black)
		Impedance	100 Ω
		Max. Distance	3 m (4096 x 2160 @ 60Hz, 4:4:4)
	Optical Audio		1 x Toslink (Black)
	Coaxial Audio		1 x RCA (Orange)
	Stereo Audio		2 x RCA (Red / White)
	RS-232 Port		1 x DB-9 Female (Black) Function: Port Switching & Firmware Upgrade Baud Rate: 19200, Data Bits: 8, Stop Bits: 1, Parity: No, Flow Control: No
	Power		1 x DC Jack
IR Extension Port		1 x Mini Stereo Jack Female (Black)	
Switches	Port Switch		Pushbutton x 4 (HDMI In)
	Mode Selection		Pushbutton x 1 (ARC ON / OFF)
	Power Button		Pushbutton x 1 (Power ON / OFF)
LEDs	Input		4 x HDMI In (Green)
	Audio		1 x ARC ON / OFF (Green)
	Power		1 x Power ON / OFF (Green / Orange)
EDID Settings			EDID Mode: Default (4K @ 60Hz) / Port-1 / Remix
IR Control			1 x IR Receiver

Function		VS482B
Video	Max. Data Rate	18 Gbps (6Gbps Per Lane)
	Max. Pixel Clock	600 MHz
	Compliance	HDMI 2.0 (3D, Audio Return Channel, Deep Color) HDCP 2.2 Consumer Electronic Control (CEC)
	Max. Resolution	4096 x 2160 / 3840 x 2160 @ 60Hz (4:4:4)
	Max. Distance	Up to 3 m (Input / Output)
Power Consumption		DC 5V:3.29W:15BTU
Environment	Operating Temperature	0–40°C
	Storage Temperature	-20–60°C
	Humidity	0–80% RH, Non-condensing
Physical Properties	Housing	Metal
	Weight	2.16 Kg (4.76 lb)
	Dimensions (L x W x H)	43.72 x 15.88 x 4.40 cm (17.21 x 6.25 x 1.73 in.)

## Limited Warranty

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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>