



Simply Better Connections

ATEN VanCryst™

VC882

True 4K HDMI Repeater with Audio
Embedder and De-Embedder
User Manual

Compliance Statements

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Warning

Operation of this equipment in a residential environment could cause radio interference.

Achtung

Der Gebrauch dieses Geräts in Wohnumgebung kann Funkstörungen verursachen.



KCC Statement

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.

HDMI Trademark Statement

The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.



RoHS

This product is RoHS compliant.

User Information

Online Registration

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

International	http://eservice.aten.com
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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.

Product Information

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	http://www.aten.com
North America	http://www.aten-usa.com

Package Contents

Check to make sure that all the components are in working order. If you encounter any problem, please contact your dealer.

- ◆ 1 VC882 True 4K HDMI Repeater with Audio Embedder and De-Embedder
- ◆ 1 3-pin terminal block
- ◆ 1 power adapter
- ◆ 1 user instructions

Table of Contents

Compliance Statements	ii
User Information	iv
Online Registration	iv
Telephone Support	iv
User Notice	iv
Product Information	v
Package Contents	vi
Table of Contents	vii
About this Manual	ix
Conventions	x

1. Introduction

Overview	1
Features	2
Planning the Installation	3
Requirements	3
Considerations	3
Components	4
Front View	4
Rear View	5

2. Hardware Setup

Connecting the VC882 Unit	7
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3. Operation

Audio Embedder Switches	9
Mode 1 PIN 1 Switch Operation	9
Mode 2 PIN 2 Switch Operation	9
Audio Extractor Switches	10
Mode 2 PIN 1 Switch Operation	10
Mode 2 PIN 2 Switch Operation	10
Mode 3 PIN 3 and PIN 4 Switch Operation	10

4. The Firmware Upgrade Utility

Introduction	11
Downloading the Firmware Upgrade Package	11
Preparation	12
Starting the Upgrade	13
Upgrade Succeeded	15
Upgrade Failed	15
Firmware Upgrade Recovery	16

Appendix

Safety Instructions	17
General	17
Rack Mounting	19
Technical Support	20
International	20
North America	20
Specifications	21
Limited Warranty	23

About this Manual

This user manual is provided to help you get the most from the VC882 unit. 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 True 4K HDMI Repeater with Audio Embedder and De-Embedder. Its purpose, features, installation considerations, and panel components are presented and described.

Chapter 2, *Hardware Setup* describes the steps that are necessary to quickly and safely set up your installation.

Chapter 3, *Operation* explains the source input operation using the source switch pushbutton and RS-232 commands and its limitations.

Chapter 4, *The Firmware Upgrade Utility* explains the source input operation using the source switch pushbutton and RS-232 commands and its limitations.


Appendix, provides a list of safety instructions and precautions, contact information for ATEN technical support, product specifications, and other technical information.

Note:

- ◆ Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit or any connected devices.
 - ◆ This product may be updated with features and functions added, improved or removed since the release of this manual. For an up-to-date user manual, visit <http://www.aten.com/global/en/>
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Conventions

This manual uses the following conventions:

- | | |
|---|--|
| Monospaced | Indicates text that you should key in. |
| [] | Indicates keys you should press. For example, [Enter] means to press the Enter 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. |

Chapter 1

Introduction

Overview

The VC882 is a True 4K HDMI Repeater with Audio Embedder and De-Embedder capable of embedding or de-embedding the HDMI audio signal, while supporting the HDMI signal transmission distance up to 5 meters with True 4K resolution. Apart from embedding a separate audio to an outgoing HDMI signal, the VC882 also allows audio extraction from the HDMI signal, and outputs the extracted signal through an alternative audio system.

In terms of the audio aspect, the VC882 works with versatile pass-through of HDMI audio formats LPCM2.0, Dolby Digital 2.0, Dolby Digital 5.1 and DTS Digital 5.1. The VC882 also supports ARC function which eliminates the need of bulky cable setups when connecting an AV receiver, or a home theater system to a TV. When it comes to the video aspect, the VC882 supports True 4K (4096 x 2160 @ 60Hz 4:4:4) in HDR10, HDR10+, Dolby Vision and Hybrid Log-Gamma (HLG) formats to provide staggeringly crisp images. It is HDCP 2.2-compliant for content protection. The compact enclosure design, True 4K signal transmission, and embedding / de-embedding capability have made the VC882 ideal for training and conference rooms, video production, and home theater installations.

Features

- ◆ Embeds audio to the HDMI output or de-embeds audio from the HDMI signal and outputs the extracted signal through an alternative audio system
- ◆ Easy embedding / de-embedding mode selection via 2 / 4-pin DIP switches
- ◆ HDMI (3D, Deep Color, True 4K); HDCP 2.2 compliant
- ◆ True 4K video quality — supports resolutions up to 4096 x 2160 @ 60Hz (4:4:4)
- ◆ Supports True 4K / HDR formats — HDR10, HDR10+, Dolby Vision and Hybrid Log-Gamma (HLG)
- ◆ Supports HDMI audio formats — LPCM 2.0, Dolby Digital 2.0, Dolby Digital and DTS Digital 5.1 channels
- ◆ Compact, portable metal enclosure designed for HDMI Lock-pro
- ◆ Firmware upgradable

Planning the Installation

Requirements

Prepare the following before installing the VC882 unit:

- ◆ 1 HDMI source device
- ◆ 1 HDMI display
- ◆ 2 HDMI cable
- ◆ 1 audio source device (e.g., audio mixer)
- ◆ 1 audio output device (e.g., audio amplifier)
- ◆ 2 RCA cable
- ◆ 2 3-pin terminal block

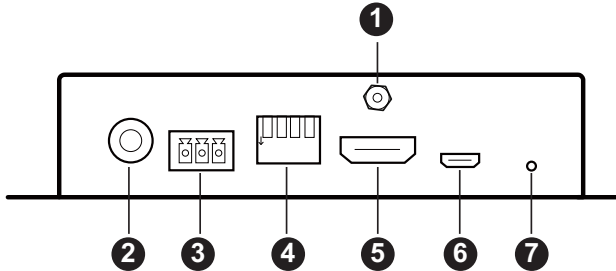
Considerations

- ◆ The maximum transmission distance varies at different parts of the transmission:

Connection	Interface	Distance
HDMI source to the VC882	HDMI	5 m
VC882 to the HDMI display	HDMI	5 m

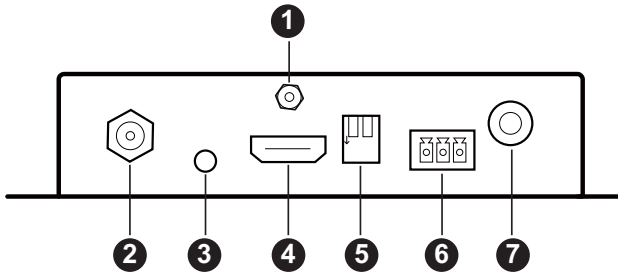
Components

Front View



No.	Component	Description
1	cable lock screw for ATEN LockPro™	Universal HDMI cable lock that provides the easiest way to secure an HDMI cable to most HDMI devices.
2	audio out port (coaxial)	Connects to an audio output device (e.g., speakers).
3	audio out port (3-pin terminal block)	Connects to an audio output device (e.g., audio amplifier).
4	audio extractor switches (mode 2)	<p>Sets PIN 1 switch to enable or disable audio extractor function. See <i>Mode 2 PIN 1 Switch Operation</i>, page 10.</p> <p>Sets PIN 2 switch to enable or disable ARC function. See <i>Mode 2 PIN 2 Switch Operation</i>, page 10.</p> <p>Set PIN 3 and PIN 4 switches to set EDID modes. See <i>Mode 3 PIN 3 and PIN 4 Switch Operation</i>, page 10.</p>
5	HDMI output port	Connects to an HDMI-enabled display device.
6	firmware upgrade port	Connects to a USB Micro-B cable for firmware upgrades. See <i>The Firmware Upgrade Utility</i> , page 11.
7	power LED	When LED lights green, it means the VC882 is receiving power.

Rear View



No.	Component	Description
1	cable lock screw for ATEN LockPro™	Universal HDMI cable lock that provides the easiest way to secure an HDMI cable to most HDMI devices.
2	power jack	Connects to the power adapter.
3	reset button	Press this reset button to reread signals every time you configure mode 1 and mode 2 switches, or change AV inputs and outputs.
4	HDMI input port	Connects to an HDMI source device.
5	audio embedder switches (mode 1)	Sets PIN 1 switch to enable or disable audio embedder function. See <i>Mode 1 PIN 1 Switch Operation</i> , page 9. Sets PIN 2 switch to set the audio embed source. See <i>Mode 2 PIN 2 Switch Operation</i> , page 9.
6	audio in port (3-pin terminal block)	Connects to an audio input device (e.g., audio mixer).
7	audio in port (coaxial)	Connects to an audio input device.

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Chapter 2

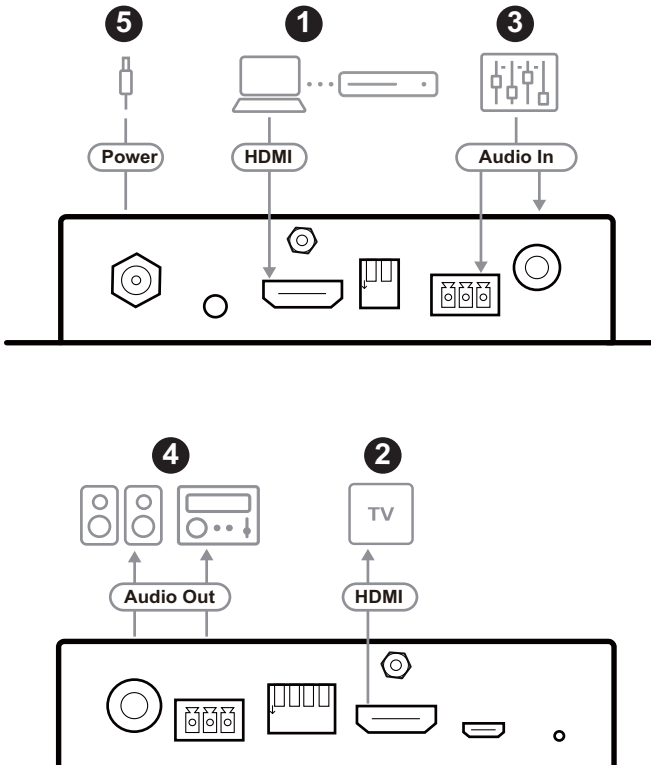
Hardware Setup



1. Please review the safety information regarding the placement of this device in *Safety Instructions*, page 17.
2. Do not power on the VC882 until all the necessary hardware is connected.

Connecting the VC882 Unit

Follow the steps below to connect the VC882 to an HDMI source device, an HDMI-enabled display device, an audio input device, and an audio output device.



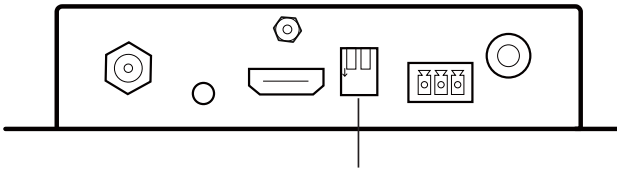
1. Connect an HDMI video source to the unit's HDMI input port. Optionally secure the HDMI cable with the corresponding cable lock screw for ATEN LockPro™.
2. Connect an HDMI display to the unit's HDMI output port. Optionally secure the HDMI cable with the corresponding cable lock screw for ATEN LockPro™.
3. Connect an audio mixer to the unit's audio in ports using the 3-pin terminal block provided. Optionally, use the audio embedder switches (mode 1) to enable or disable audio embedding for the connected audio inputs.
4. Connect an audio amplifier or a set of speakers to the unit's audio out ports. Optionally, use the audio extractor switches (mode 2) to enable or disable audio extraction for the connected audio inputs.
5. Plug one end of the power adapter into the unit's power jack, and the other end to an AC power source. The power LED shall be lit in blue.
6. Power on all connected equipment.

Chapter 3 Operation

Audio Embedder Switches

Sets the audio embedder switches (mode 1) to enable or disable the audio embedder function, and set the audio embed source.

Note: Remember to press the reset button to reread signals every time you configure mode 1 and mode 2 switches, or change AV inputs and outputs.



audio embedder switches (mode 1)

Mode 1 PIN 1 Switch Operation

DPI Switch Position	Description	
PIN 1	ON ↓	Enables audio embedder function.
	OFF ↑	Disables audio embedder function.

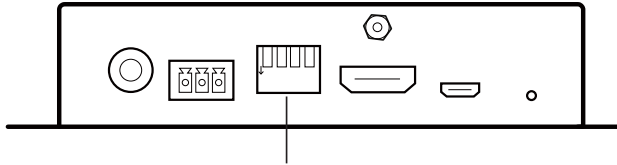
Mode 2 PIN 2 Switch Operation

DPI Switch Position	Description	
PIN 2	ON ↓	Switches audio embedder to the audio in port (coaxial).
	OFF ↑	Switches audio embedder to the audio in port (3-pin terminal block).

Audio Extractor Switches

Sets the audio extractor switches (mode 2) to enable or disable the audio extractor and ARC functions, or set EDID modes.

Note: Remember to press the reset button to reread signals every time you configure mode 1 and mode 2 switches, or change AV inputs and outputs.



audio extractor switches (mode 2)

Mode 2 PIN 1 Switch Operation

DPI Switch Position	Description	
PIN 1	ON ↓	Enables audio extractor function via coaxial and 3-pin terminal block.
	OFF ↑	Disables audio extractor function via coaxial and 3-pin terminal block.

Mode 2 PIN 2 Switch Operation

DPI Switch Position	Description	
PIN 2	ON ↓	Enables ARC function.
	OFF ↑	Disables ARC function.

Mode 3 PIN 3 and PIN 4 Switch Operation

DPI Switch Position	PIN 3	PIN 4	Description
PIN 3 + PIN 4	ON ↓	ON ↓	Sets to EDID Bypass Mode (default).
	OFF ↑	ON ↓	Sets to EDID 5.1 CH Mode.
	ON ↓	OFF ↑	Sets to EDID 2 CH Mode.
	OFF ↑	OFF ↑	Sets to EDID Learn Mode.

Chapter 4

The Firmware Upgrade Utility

Introduction

The purpose of the Windows-based Firmware Upgrade Utility is to provide an easy process for upgrading the VC882. 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

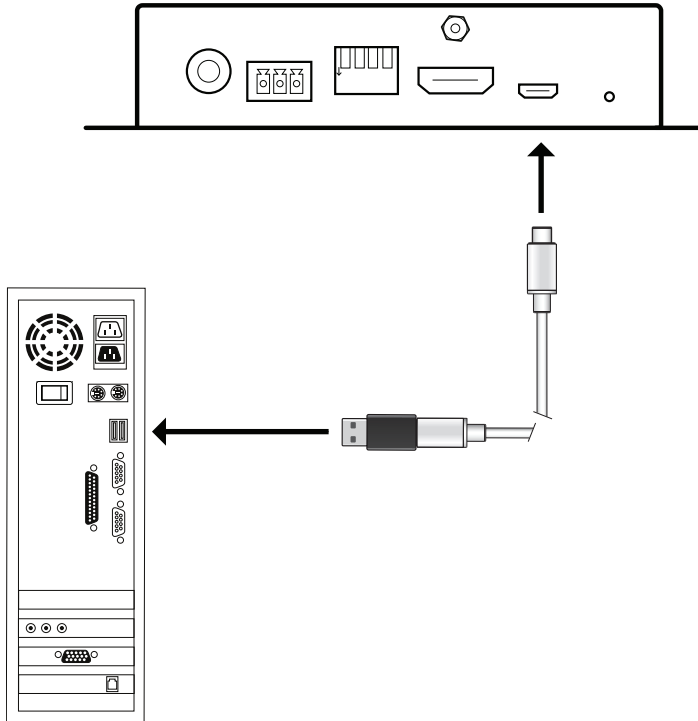
To download the firmware upgrade package:

1. On our Website go to: *Download - Firmware* and choose the device model, or from the VC882 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

To prepare for the firmware upgrade, do the following:

1. Unplug the VC882's power adapter.
2. Use a USB Micro-B cable to connect a USB Type-A port on your computer, and the other end to the *firmware upgrade port* of your VC882.



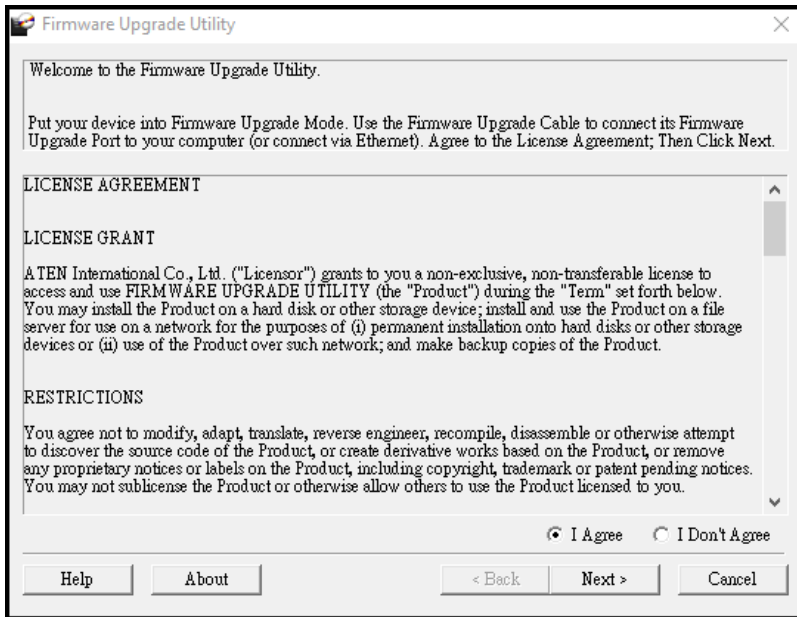
3. Plug the power adapter into power jack on the VC882.
4. If successful, the power LED will start to flash. Now, you can start the upgrade process as explained on the next page.

Starting the Upgrade

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.

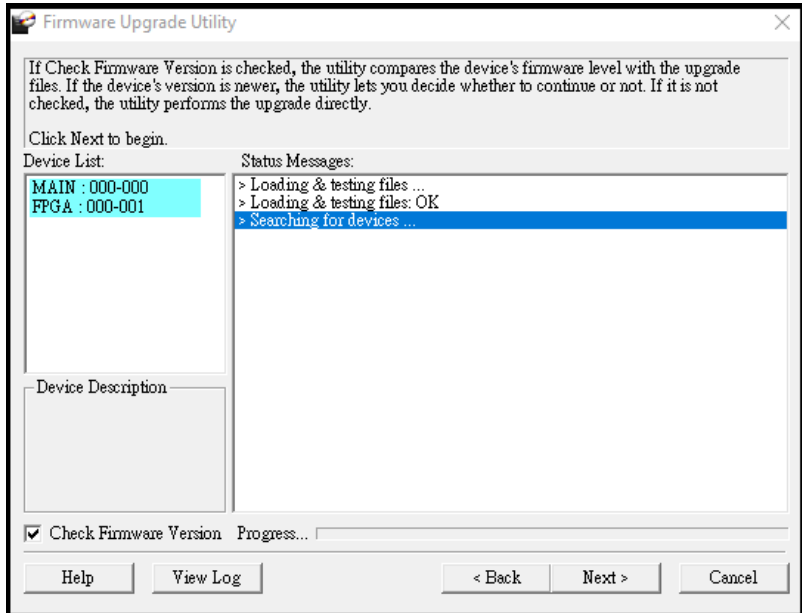
The *Firmware Upgrade Utility* welcome screen appears:



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 slight from these examples.

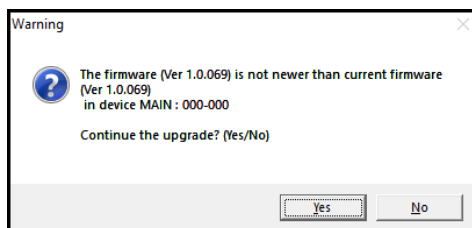
2. Read and *Agree* to the License Agreement (click the **I Agree** radio button).

- 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 Status LEDs SDI, HDMI, and power 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.

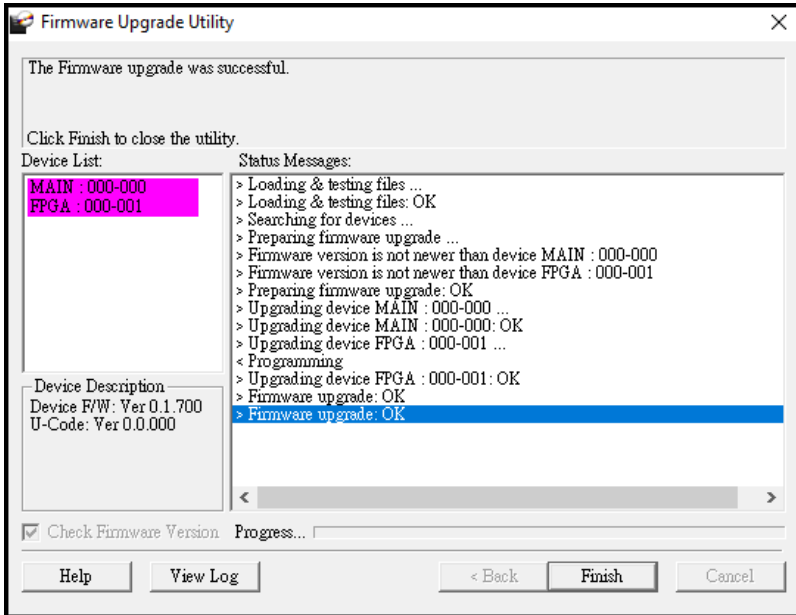


If you didn't enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether they are a higher level, or not.

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, the power LED 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

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 USB Micro-B cable to the USB Type-A port on your computer, and the other end to the *firmware upgrade port* of your VC882
3. Repeat the upgrade procedure.

Safety Instructions

General

- ◆ This product is for indoor use only.
- ◆ Read all of these instructions. Save them for future reference.
- ◆ Follow all warnings and instructions marked on the device.
- ◆ 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.
- ◆ To prevent damage to your installation it is important that all devices are properly grounded.
- ◆ Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.
- ◆ 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.
 - ◆ The power cord or plug has become damaged or frayed.
 - ◆ 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

International

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

North America

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 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	VC882
LED	
Power	1 x LED (Blue)
Reset Button	1 x Pushbutton (to activate mode configuration)
Switches	
Mode Selection	2 x Switches (Mode 1) PIN 1 (Enables or disables audio embedder function) PIN 2 (Sets the audio embed source)
	4 x Switches (Mode 2) PIN 1 (Enables or disables audio extractor function) PIN 2 (Enables or disables ARC function) PIN 3 & PIN 4 (Sets the EDID mode: Bypass, 5.1 CH, 2 CH, and Learn)
Video Input	
Interfaces	1 x HDMI Type-A Female (Black)
Impedance	100 Ω
Max. Distance	5 m
Video Output	
Interfaces	1 x HDMI Type-A Female (Black)
Impedance	100 Ω
Max. Distance	5 m
Video	
Max. Data Rate	18 Gpbs
Max. Pixel Clock	600 MHz
Compliance	HDMI (3D, Deep Color) HDCP 2.2
Max. Resolutions	4096 x 2160 @ 60Hz (4:4:4) 8 bit
Audio	
Output	1 x Coaxial Format: LPCM 2.0, Dolby Digital 2.0, Dolby Digital 5.1, and DTS Digital 5.1 1 x 3-pin terminal block Format: Analog, stereo, unbalanced, and LPCM 2.0

Function	VC882
Input	1 x Coaxial Format: LPCM 2.0, Dolby Digital 2.0, Dolby Digital 5.1, and DTS Digital 5.1 1 x 3-pin terminal block Format: Analog, stereo, unbalanced, and LPCM 2.0
Connectors	
Power	1 x DC Jack, 5V 3A, Lockable
Firmware Upgrade	1 X USB Micro-B
Power	
Consumption	DC5V; 2.905W; 9.92BTU
Environmental	
Operating Temperature	0 - 40°C
Storage Temperature	-20 - 60°C
Humidity	0 - 80% RH, Non-Condensing
Physical Properties	
Housing	Metal
Weight	0.24 kg (0.53 lb)
Dimensions (L x W x H)	12.22 x 8.22 x 2.50 cm (4.81 x 3.24 x 0.98 in)

Limited Warranty

ATEN warrants its hardware in the country of purchase against flaws in materials and workmanship for a Warranty Period of two [2] years (warranty period may vary in certain regions/countries) commencing on the date of original purchase. This warranty period includes the [LCD panel of ATEN LCD KVM switches](#). Select products are warranted for an additional year (see [A+ Warranty](#) for further details). Cables and accessories are not covered by the Standard Warranty.

What is covered by the Limited Hardware Warranty

ATEN will provide a repair service, without charge, during the Warranty Period. If a product is 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/>