



**4K HDMI/DVI to HDMI Converter  
with Audio De-embedder  
VC881 User Manual**



# Preface

## 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.

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.

### 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

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### 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 VC881 4K HDMI/DVI to HDMI Converter with Audio De-embedder
- ◆ 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 VC881 since this manual was published. Please visit our website to download the most up-to-date version of the manual.

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## About this Manual

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This User Manual is provided to help you get the most from your VC881 4K HDMI/DVI to HDMI Converter. 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 VC881 unit. Their purposes, features, and benefits are presented.

**Chapter 2, Hardware Setup**, describes the function of hardware component on the VC881's front and back panels, and the steps that are necessary to quickly and safely set up your VC881 unit.


**Chapter 3, Operation**, provides instructions on upgrading the VC881's firmware.

**An Appendix**, provides specifications and other technical information regarding the VC881 unit.

## Conventions

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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 *Start* menu, and then select *Run*.
-  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>

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# Chapter 1

## Introduction

### Overview

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The VC881 is a 4K HDMI/DVI to HDMI converter that can output HDMI video and extracts the HDMI audio to a speaker or a home theater system. This provides you the flexibility to output high quality audio in the S/PDIF, coaxial, or stereo audio format. Such installation is also made easy with the VC881's ARC (Audio Return Channel) technology, with which HDMI audio can be transmitted using a single HDMI cable. The VC881's compact enclosure and audio de-embedding capability make the VC881 ideal for bars, public transportation stations, and home theater settings.

### Features

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- ◆ Easy mode selection via a pushbutton
  - ◆ HDMI to HDMI
  - ◆ DVI to HDMI
  - ◆ ARC (Audio Return Channel)
- ◆ HDMI 1.4 (3D, Deep Color, 4K); HDCP 1.4 compliant
- ◆ Superior video quality
  - ◆ HDMI: up to 4K (3840 x 2160 @30Hz)
  - ◆ DVI: up to 1920 x 1200
- ◆ HDMI audio stream can be extracted and converted into the S/PDIF, coaxial, or RCA stereo audio format
- ◆ LED indication of power status
- ◆ Firmware upgradeable
- ◆ All metal casing

## **Requirements**

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### **Devices**

- ◆ An HDMI-enabled display
- ◆ An HDMI or DVI source device
- ◆ (Optional) speaker or home theater system

### **Cables**

- ◆ 1 x grounding wire
- ◆ 1 x HDMI cable for connecting the HDMI source device to the VC881
- ◆ 1 x DVI cable for connecting the DVI source device to the VC881
- ◆ 1 x audio cable for connecting the DVI source device to the VC881
- ◆ 1 x HDMI cable for connecting the HDMI display to the VC881
- ◆ (Optional) Audio cables for connecting an independent speaker or home theater system

# Chapter 2

## Hardware Setup



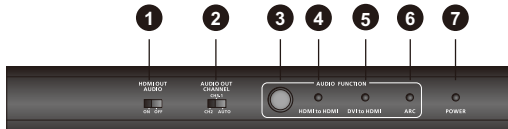
1. Important safety information regarding the placement of this device is provided on page 11. Please review it before proceeding.
2. Make sure that the power to all devices connected to the installation are turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.

### Components

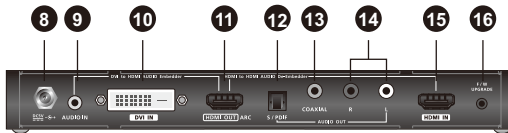
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Use the following illustration and the table to find out what each component on the VC881 does.

Front View



Rear View



Side View

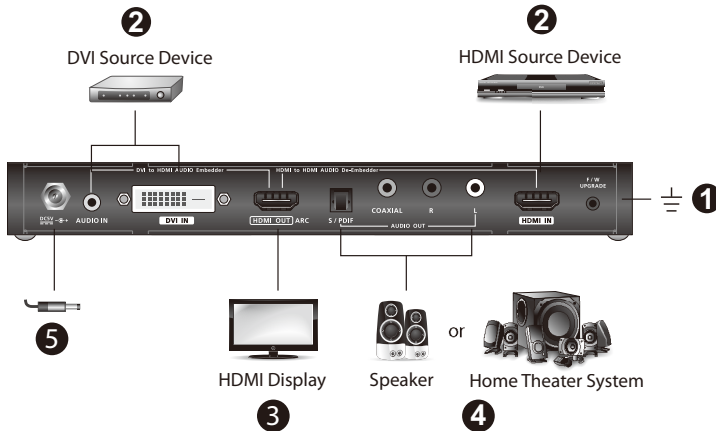


No.	Component	Description
1	HDMI Audio Out Switch	Enables or disables the HDMI audio output on the connected HDMI display.
2	Audio Out Channel Switch	Selects the audio output channel among <b>Ch2</b> , <b>Ch5.1</b> , and <b>AUTO</b> .
3	Audio Function / Firmware Upgrade Button	<ul style="list-style-type: none"> <li>◆ Selects the audio processing mode for the VC881. You can choose among the following options: <ul style="list-style-type: none"> <li>◆ <b>HDMI to HDMI</b>: Sends HDMI sources to the connected HDMI display.</li> <li>◆ <b>DVI to HDMI</b>: Converts DVI sources to HDMI sources and then sends them to the connected HDMI display.</li> <li>◆ <b>ARC</b>: Sends HDMI video signals to an ARC-compatible HDMI display and the audio signals to an ARC-compatible speaker.</li> </ul> </li> <li>◆ Starts the firmware upgrade mode for the VC881. For details, see <i>Firmware Upgrades</i>, page 9.</li> </ul>
4	HDMI to HDMI LED	Lights up when the <b>HDMI to HDMI</b> function is selected.
5	DVI to HDMI LED	Lights up when the <b>DVI to HDMI</b> function is selected.
6	ARC LED	Lights up when the <b>ARC</b> function is selected.
7	Power LED	Lights up when the VC881 unit is receiving power.
8	Power Jack	Receives a power adapter to supply power to the VC881 unit.
9	Audio In	Receives an audio cable to transmit audio signals from a DVI source device to the VC881 unit.
10	DVI In	Receives a DVI cable to transmit video signals from a DVI source device to the VC881 unit.
11	HDMI Out	Receives an HDMI cable to output HDMI signals to an HDMI-enabled display.
12	Audio Out (S/PDIF)	Receives an S/PDIF audio wire to transmit audio to a separate speaker or home theater system.
13	Audio Out (Coaxial)	Receives a coaxial audio wire to transmit audio to a separate speaker or home theater system.
14	Audio Out (Stereo)	Receive stereo audio wires to transmit audio to a separate speaker or home theater system.
15	HDMI In	Receives HDMI sources via an HDMI cable.

No.	Component	Description
16	Firmware Upgrade Port	Receives an upgrade cable for device firmware upgrades. For details, see <i>Firmware Upgrades</i> , page 9.
17	Grounding Terminal	Receives a grounding wire.

## Installation

Before you proceed with the setup, make sure that all the equipment to be connected is powered off and then follow the procedure below to safely install your devices.



1. Ground the VC881 by connecting one end of the grounding wire to the grounding terminal, and the other end to a suitable grounded object.

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**Note:** Do not omit this step. Proper grounding helps prevent damage to the unit from power surges or static electricity.

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2. Connect an HDMI and/or DVI source device to the VC881.
  - ◆ For an HDMI source device, use an HDMI cable to connect the source device's HDMI Out port to the VC881's HDMI In port.
  - ◆ For a DVI source device, use a DVI cable to connect the source device's DVI Out port to the VC881's DVI In port and use an audio cable to connect to the source device's Audio Out port to the VC881's Audio In port.
3. Connect an HDMI display to the VC881 using an HDMI cable.

4. (Optional) To use an independent speaker or a home theater system, do one of the following:
  - ◆ If your HDMI display and the sound system are both ARC-compatible, use an HDMI cable to connect the display to the sound system.
  - ◆ If your sound system is *not* ARC-compatible, use appropriate audio cables to connect the VC881's Audio Out port(s) to the Audio In port(s) on the sound system, and then use an HDMI cable to connect the sound system to the HDMI display.
5. Plug in the supplied power adapter to the VC881's Power Jack.
6. Power on all equipment. The VC881's power LED lights green.
7. Based on your setup scenario, set the VC881's audio settings as described in the following table.

Scenario	Required Settings		
	HDMI Audio Out Switch	Audio Out Channel Switch	Audio Function
Output the HDMI source as HDMI video and audio on the connected display.	ON	AUTO	HDMI to HDMI
Output the HDMI source as HDMI video without the audio.	OFF	N/A	HDMI to HDMI
Output the HDMI source as HDMI video with its audio on a speaker.	OFF	CH2	HDMI to HDMI
Output the HDMI source as HDMI video with its audio on a home theater system.	OFF	CH5.1	HDMI to HDMI
Output the DVI source as HDMI video and audio on the connected display.	ON	AUTO	DVI to HDMI
Output the HDMI source as HDMI video on the connected display, and the HDMI audio on an independent speaker or home theater system. <b>Note:</b> Make sure your display device is ARC-compatible.	N/A	N/A	ARC

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# Chapter 3

## Operation

### Firmware Upgrades

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1. Download the VC881's latest firmware from the ATEN website.
2. Use a firmware upgrade cable to connect the VC881's Firmware Upgrade port to the computer to which you downloaded the firmware package.

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**Note:** The firmware upgrade cable is not included in the package. Please contact your dealer for more information.

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3. Power off the VC881.
4. Press and hold the Audio Function / Firmware Upgrade Button on the VC881's front panel.
5. Power on the VC881, and release the Audio Function / Firmware Upgrade Button until all panel LEDs blink. The VC881 is now in the Firmware Upgrade mode.
6. Run the firmware upgrade file and follow the on-screen instructions to complete the upgrade.

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## 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.
- ◆ 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.
- ◆ If an extension cord is used with this device make sure that the total of the ampere ratings of all products used on this cord does not exceed the extension cord ampere rating. Make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.

- ◆ 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.
  - ◆ 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.

## **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://eservice.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	VC881
<b>Switches</b>	
Mode Selection	Side Switch x 1 (HDMI Audio Out - ON/OFF)
	Side Switch x 1 (audio Out Channel - AUTO/CH5.1/CH2)
	Pushbutton x 1 (Audio Function Selection - HDMI to HDMI, DVI to HDMI, ARC)
<b>Video Input</b>	
Interfaces	1 x HDMI Type A Female (Black) 1 x DVI-D Female (White)
Impedance	100 $\Omega$
Max. Distance	HDMI: 3 m DVI: 1.8 m
<b>Video Output</b>	
Interfaces	1 x HDMI Type A Female (Black) with ARC
Impedance	100 $\Omega$
Max. Distance	3 m
<b>Video</b>	
Max. Data Rate	6.75 Gps (2.25 Gbps per Lane)
Max. Pixel Clock	225 MHz
Compliance	HDMI 1.4 (3D, Deep Color)
	HDCP 1.4 Compatible
Max. Resolution	HDMI 3840 x 2160 @ 30Hz
	DVI 1920 x 1200
<b>Audio</b>	
Output	1 x D/PDIF
	1 x Coaxial
	2 x 3.5 mm Jack (RCA)
Input	1 x 3.5 mm Jack (FW Upgrade)
<b>Connectors</b>	
Power	1 x DC Jack, 5V, Lockable
Firmware Upgrade	1 x 3.5 mm Jack (FW Upgrade)
<b>Power Consumption</b>	DC5V, 1.77W
<b>Environmental</b>	
Operating Temperature	0–40° C
Storage Temperature	-20–60° C

<b>Function</b>	<b>VC881</b>
Humidity	0–80% RH, Non-condensing
<b>Physical Properties</b>	
Housing	Metal
Weight	0.47 kg
Dimensions	20.20 cm x 8.49 cm x 2.50 cm



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## 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/>