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HDACC II-4K
UHD Audio Center

4k x 2k+
HDCP 2.2

Operation Manual

HDMI®

HIGH-DEFINITION MULTIMEDIA INTERFACE

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1. INTRODUCTION

The Essence HDACC II-4K is designed to allow multiple analog/digital audio sources to be controlled, switched and output to a variety of analog/digital audio components. With video bandwidth support up to 18G at 4K2K and audio sampling rate converter up to 384KHz this device has an array of unbeatable features you can't find in any other product on the market. Also it supports 2CH LPCM audio, HDMI, USB Audio 2.0, Optical and Coaxial input/output with both ADC and DAC functions. USB supports DOP (DSD over PCM) decoding, with high sampling frequency to perform high quality conversion and lower the probability of distortion.

For professional applications, the headphone output with built-in amplifier and XLR (Low noise Professional Balance) output offer unparalleled audio quality. Traditional 3.5mm earphone jack analog input and stereo RCA output with a highly accurate PLL and low jitter reduction clock system enables users with total improvement over the original sound. OLED display of sample rates with on-panel and IR remote control provide users with on-the-fly adjustment capability.

2. APPLICATIONS

- Audio format conversion and sampling upgrade
- Professional audio display
- PC audio display onto professional speakers/headphone
- Analog to digital or digital to analog audio conversion

3. PACKAGE CONTENTS

- 1×HDACC II-4K
- 1×Remote Control (with Battery)
- 1×USB Driver Disc
- 1×6.3mm to 3.5mm Phone Jack Cable
- 1×5 V/3 A Power Adaptor
- 1×Operation Manual

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4. SYSTEM REQUIREMENTS

Input source equipment such as CD /DVD /Blu-ray Standard and 4K player or computer via HDMI, USB, Optical or Analog stereo output to amplifier or speaker with analog stereo input. Using USB input, the audio driver from the disc contained on package is needed to install for Windows computer, supported up to Win 10.

5. FEATURES

Digital

- Supports Coaxial, Optical, USB and 4 HDMI v2.0a inputs
- Supports HDMI, Coaxial and Optical outputs
- Supports digital audio signal input and conversion into analog stereo
- Supports HDMI Audio output: can either output the incoming embedded HDMI (Bypass Mode) or   insert the selected audio signal (Ext Audio Mode)
- HDMI video always bypassed to HDMI output
- Supports HDMI video resolutions up to 4K2K (3840×2160@24/25/30/50/60Hz & 4096×2160@24/25/30/50/60Hz)
- Supports HDMI bandwidth up to 18Gbps and Deep Color up to 4K 36bit
- Support Coaxial Input/ output and USB input sampling rate up to 384 KHz / 32bits.
- Coaxial and Optical input support DOP (DSD over PCM) decoding to PCM
- HDMI audio embedding or de-embedding
- Supports Sampling Rate Conversion, all inputs can be SRC to 44.1, 48, 88.2, 96, 176.4, 192 and 384 KHz via DSP Engine

Analog

- Supports L/R in/output, XLR and 6.3mm headphone outputs
- Supports analog audio signal input converting into digital signal output
- Supports Headphone output Volume Control

- Headphone output volume control over main control dial or remote control

- Headphone output fades in after system is muted

- 6.3mm headphone output

Misc

- Control by remote control and on-panel wheel

- Direct power and mute button on unit

- High viewing angle OLED display

- Free Run: Auto 720P Colorbar Pattern Output when no video source is connected.

# 6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel
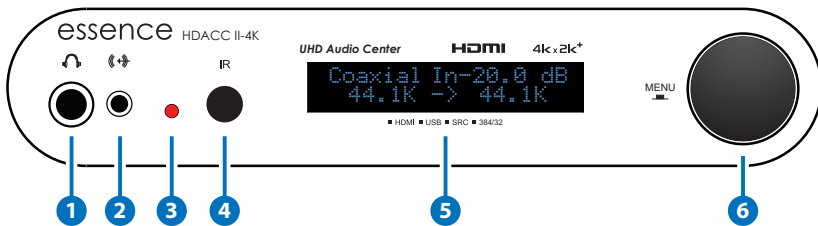
1 **6.3mm HEADPHONE OUT:** This jack is to connect with 6.3mm (1/4") professional headphone so user can enjoy personal listening.

2 **3.5mm LINE IN:** This is to connect a 3.5mm headphone jack cable from any Smartphone, Digital Audio Player (DAP) or other audio equipment for stereo line in analog audio signal.

3 **POWER LED:** The LED will illuminate red when the device is connected with power supply (standby), and will turn green when you turn on the device.

4 **IR WINDOW:** This is the IR receiver window that accepts IR signal from the remote control of this device that is included in the package.

5 **OLED:** This OLED displays the in/output selection with volume setting, sampling rate and audio channels.

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6 MENU/VOLUME CONTROL: Press this control knob to enter into the menu selection or rotate to adjust the volume.

6.2 Rear Panel
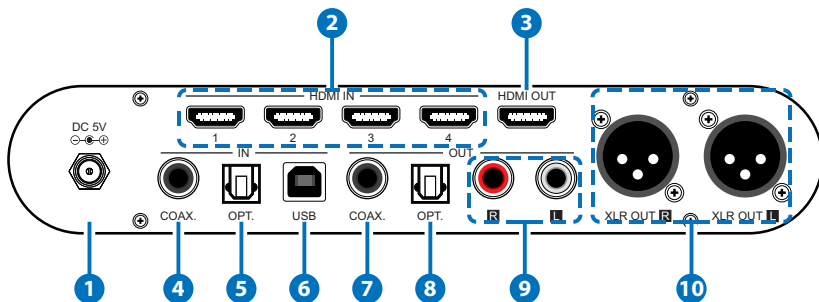
1 DC 5V: Plug the 5V DC power adaptor included in the package into the unit and connect the adaptor to an AC outlet for power supply. The adapter is automatic and universal, working on all voltages worldwide and comes with 4 adapter plugs to suit any required connection.

2 HDMI IN 1~4: Connect up up to 4 HDMI sources such as DVD/ Blu-ray Standard / Blu-ray 4K player with 18G HDMI signal transmission over high speed HDMI cable. 18G signals are supported on all 4 ports.

3 HDMI OUT: Connect to UHD 4K HDTV/monitor for output image display with 18G HDMI signal transmission from high speed HDMI cables.

4 COAX. IN: Connect input source equipment such as Cable Broadcast or Satellite Set-Top- Box , PS3, CD for input audio signal transmitted over Coaxial cable.

5 OPT. IN: Connect input source equipment such as DVD/Blu-ray player for input audio signal transmitted via Optical cable.

6 USB IN: This slot is to connect with PC/Portable digital players and server sources for USB audio signal input. This slot is also for firmware upgrades, supported up to Win 10.

7 COAX. OUT: Connect to amplifier or active speaker with coaxial cable.

8 **OPT. OUT:** Connect to amplifier or active speaker with optical cable.

9 **L/R OUT:** Connect to amplifier or active speaker with RCA jack cable.

10 **XLR (L/R) Balanced OUT:** These slots are to connect to amplifier or directly to professional active speakers with XLR cables, allows for the use of long cables while reducing susceptibility to external noise.
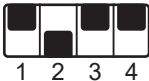
6.3 Top Panel

POWER   MUTE

1   **2**
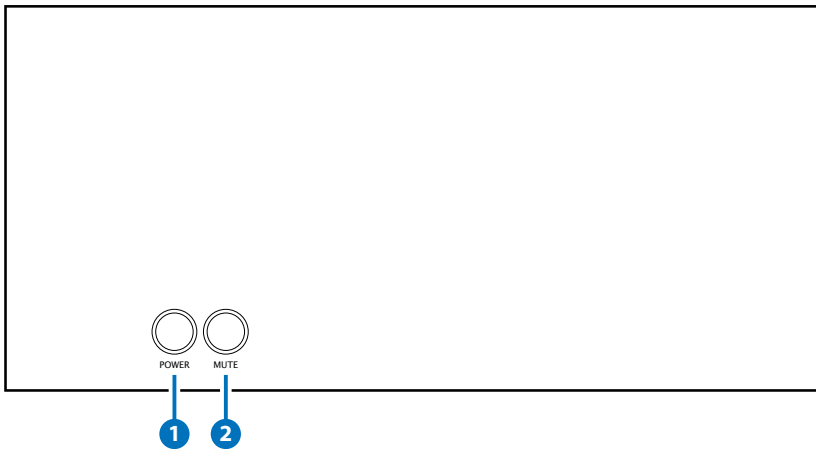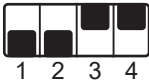
1 **POWER:** Press this button to switch on the device or turn it to standby mode.

2 **MUTE:** Press this button to mute all volume instantly.

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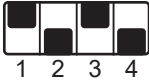
6.4 Remote Control

1 **POWER:** Press to turn the unit power on or set to standby mode.

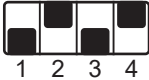**2** **MENU:** Press the key to enter OSD menu, use V+/V- to go up and down between the menu selections, press again to enter submenu.

3 **RETURN:** When in the menu, press this to go back upper layer or exit from menu selections.

4 **VOLUME +/-:** Press V+ / V- to control output volume up and down. When press MENU key into menu selections, use V+ / V- to go up and down menu selections.

5 **MUTE:** Press this button to mute all audio volume, press again to unmute.

6 **HDMI 1~4:** Press these hot keys to select HDMI input sources from 1~4.

7 **COAX.:** Press this hot key to switch input source to Coaxial input.

8 **OPT.:** Press to select Optical input.

9 **USB:** Press to select USB input.

10 **LINE:** Press to select LINE input.

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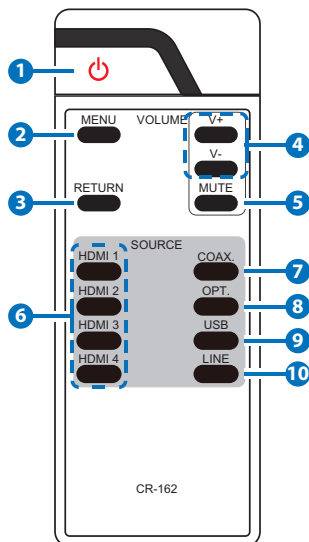
REMOTE CONTROL SETTING	IR CHANNEL
ON DIP 1 2 3 4	0
ON DIP 1 2 3 4	1
ON DIP 1 2 3 4	2
ON DIP 1 2 3 4	3
ON DIP 1 2 3 4	4
ON DIP 1 2 3 4	5
ON DIP 1 2 3 4	6
ON DIP 1 2 3 4	7
ON DIP 1 2 3 4	8

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REMOTE CONTROL SETTING	IR CHANNEL
ON DIP 1 2 3 4	9
ON DIP 1 2 3 4	10
ON DIP 1 2 3 4	11
ON DIP 1 2 3 4	12
ON DIP 1 2 3 4	13
ON DIP 1 2 3 4	14
ON DIP 1 2 3 4	15

6.5 OLED Menu

MAIN MENU	SUB MENU	DESCRIPTION	DEFAULT
Source In	HDMI 1 IN	Input selection	HDMI 1
	HDMI 2 IN		
	HDMI 3 IN		
	HDMI 4 IN		
	Coaxial IN		
	Optical IN		
	USB IN		
	Line IN		
	Return		
SRC Set	Bypass	Set output SRC Frequency	BYPASS
	384 kHz		
	192 kHz		
	176.4 kHz		
	96 kHz		
	88.2 kHz		
	48 kHz		
	44.1 kHz		
	Return		

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MAIN MENU	SUB MENU		DESCRIPTION	DEFAULT
HDMI TX Set	VIDEO	HDMI 1	Set HDMI input and Audio	Follow Audio
		HDMI 2		
		HDMI 3		
		HDMI 4		
		Follow Audio		
		Return		
	AUDIO	Bypass		Bypass
		Ext Audio		
		Return		
	Return			
Diplay Set	TimeOut 5s		Set LCM display time	TimeOut 15s
	TimeOut 10s			
	TimeOut 15s			
	Return			
HP Impedance Set	16 Ω		Headphone Impedance	16 Ω
	32 Ω			
	64 Ω			
	200 Ω			
	300 Ω			
	600 Ω			
	Return			
Line Out Vol Set	Fix Level		Set Headphone Volume mode	Volume Level
	Volume Level			
	Return			

| MAIN MENU	SUB MENU	DESCRIPTION	DEFAULT
Firmware	Version	Show Firmware Version	N/A
	Update?	Update Firmware	
	Return		
Reset to Default			
AUTO POWER ON	OFF	Set Auto power on status	OFF
	ON		
	Last State		
	Return		
IR Channel	0	Set Remote Control IR Channel	
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
Return			

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6.6 Firmware Updates

This unit provides a simple and easy way to update the firmware via the USB port. Updating the firmware requires access to a standard Windows XP or later PC/Laptop. [1]

[1] Units with a firmware before v2.23 can only be updated on Windows XP, 7, 8, or 8.1 PCs. Updating in Windows 10 from those earlier firmware versions is not supported. Beginning with firmware version v2.23, firmware update support within Windows 10 has been added.

Update Procedure:

1. Power the unit on and using the unit's front panel, navigate, using the Menu Knob, to the ">Firmware" menu item and select it. The current firmware version will be displayed.

2. Turn the knob until the unit displays ">Update?" and press the knob in to select it. The following information will show on the unit's display:
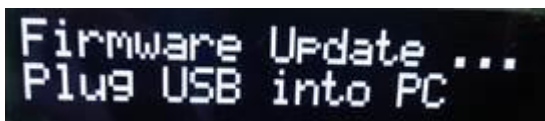
3. Connect the unit to your Windows PC via USB. The Windows PC will detect the unit as a USB storage device. Open up Windows Explorer and you will see a new USB storage device named "USB UPDATER" in the drive list. (Note: The drive letter assigned will vary from PC to PC, depending on the number of drives already existing on the PC.)
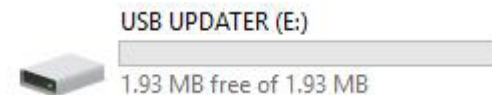
4. Copy the new firmware file (*.bin format) onto the "USB UPDATER" drive. Once the file copy is complete the power light on the unit will begin blinking rapidly and then the unit will automatically power off. (Note: If an invalid file is copied to the unit, the update process won't start and the unit will need to be manually rebooted by unplugging the power.)

5. Power the unit back on and verify that the desired new firmware version is displayed.

7. CONNECTION DIAGRAM

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Headphones

Headphones Output

Line-level Input

Smartphone or MP3 Player

Satellite Receiver

Set-top Box

UHDTV

Blu-ray Player

Games Console

HDMI Output

HDMI Inputs

Power Supply

XLR Balanced Audio Output

Digital Audio Inputs

USB Input

Analog Audio Output

Digital Audio Outputs

Set-top Box

PC/Laptop

Active Speakers

AV Receiver

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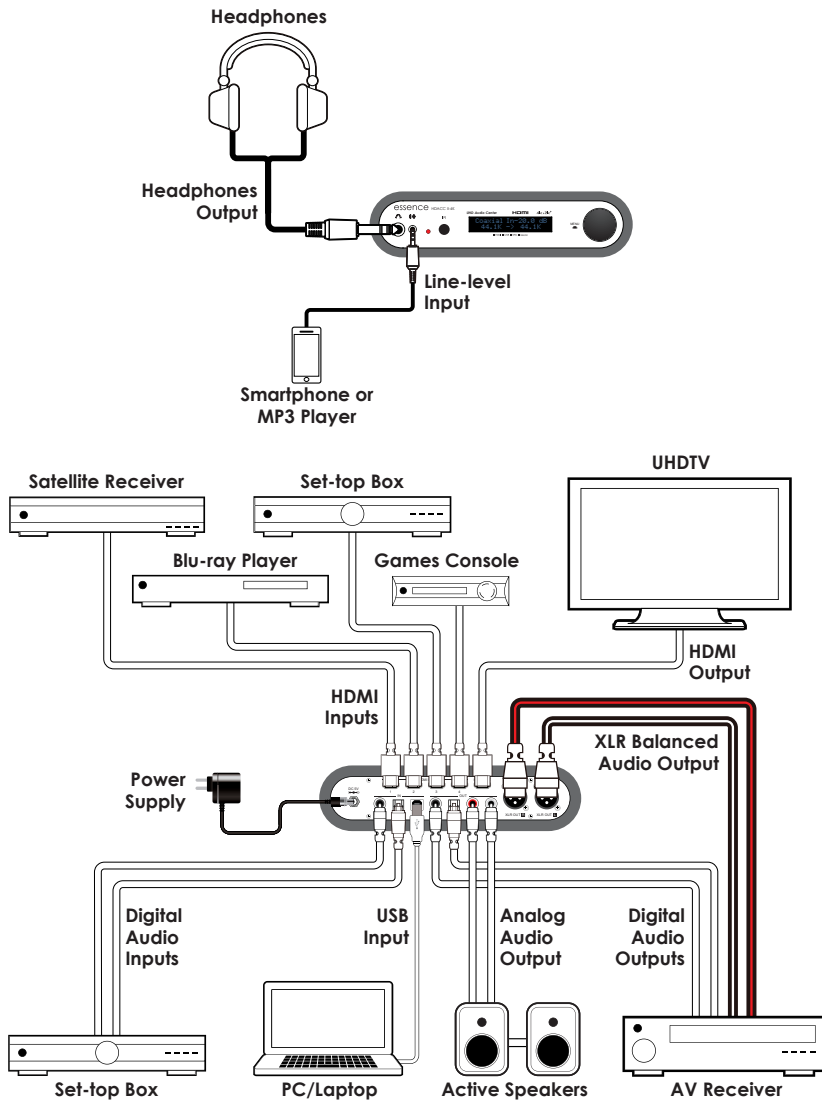
8. SPECIFICATIONS

8.1 Technical Specifications

Video Bandwidth	600 MHz/18 Gbps
Input Ports	4×HDMI, 1×Coaxial, 1×Optical, 1×USB (Type B), 1×3.5 mm Smartphone Headphone Jack (Analog Line-in)
Output Ports	1×HDMI, 1×Coaxial, 1×Optical, 2×RCA (Analog Stereo), 1×XLR (Balanced Audio), 1×6.3 mm Phone Jack (Headphone)
HDMI Resolutions	VGA~WUXGA (RB), 408i~1080p@24/50/60, 4K@24/25/30, 4K@50/60 (YUV420)
Digital Audio I/O Format	LPCM 2CH
XLR Balanced Audio I/O Level	4Vrms±0.2
Headphone Impedance	16Ω~600Ω
Power Supply	5 V/3 A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human body model: ±8 kV (air-gap discharge) ±4 kV (contact discharge)
Dimensions	8.9"(223 mm) W × 5.5" (145 mm) D × 2" (50 mm) H
Weight	886 g (2 lbs)
Chassis Material	Aluminum
Color	Black
Operating Temperature	0˚C~40˚C/32˚F~104˚F
Storage Temperature	−20˚C~60˚C/−4˚F~140˚F
Relative Humidity	20~90% RH (non-condensing)
Power Consumption	14.5 W

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8.2 Audio Specification

Input Level/Freq.	Output	Output Level	THD+N	Frequency Response	SNR >90dB	Crosstalk <-90dB
HDMI 2Vrms*/1kHz	HDMI (Ext Audio)	-0.000	0.00001%	±1 dBFS	>141dB	<-110dB
Optical 2Vrms*/1kHz	Optical	-0.000	0.00001%	±1 dBFS	>141dB	<-164dB
Coaxial 2Vrms*/1kHz	Coaxial	-0.000	0.00001%	±1 dBFS	>141dB	<-163dB
Analog Line 2Vrms*/1kHz	Analog(L/R)	1.864	0.001%	±1 dBFS	>110dB	<-164dB
USB 2Vrms*/1kHz	Analog(XL/XR)	3.922	0.001%	±1 dBFS	>111dB	<-118dB