AU-1H1DD-4K22

HDMI Audio De-Embedder with Dolby Digital & DTS Decoder (4K,HDCP2.2, HDMI2.0)

OPERATION MANUAL

DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. CYP (UK) Ltd assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.

CYP (UK) Ltd assumes no responsibility for any inaccuracies that may be contained in this document. CYP (UK) Ltd also makes no commitment to update or to keep current the information contained in this document.

CYP (UK) Ltd reserves the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

Version 1.1 August 2011

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated. Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

Manufactured under license under U.S. Patent Nos: 5,956,674; 5,974,380; 6,487,535 & other U.S. and worldwide patents issued & pending. DTS, the Symbol, & DTS and the Symbol together are registered trademarks & DTS 2.0+Digital Out is a trademark of DTS, Inc. Product includes software. © DTS, Inc. All Rights Reserved.

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

REVISION HISTORY

VERSION NO.	DATE	SUMMARY OF CHANGE
v1.00	26/02/16	First release

CONTENTS

1. INTRODUCTION

The AU-1H1DD-4K22 is an advanced solution for de-embedding and down-mixing audio signals from the HDMI input (up to Dolby® Digital and DTS® 2.0+Digital Out). Connect the AU-1H1DD between the source and your display via HDMI, and select 2CH LPCM or bypass.

The digital audio outputs can be set to either 2CH LPCM or bypass. The L/R analogue outputs will always output down-mixed stereo (with audio up to Dolby® Digital and DTS® 2.0+Digital Out). This device supports the latest 4K2K resolutions, HDMI2.0 and HDCP2.2 for stunning results.

2. APPLICATIONS

/// Home entertainment installation

/// Audio extraction & extension

/// Non-HDMI AV receivers or wider audio systems

3. PACKAGE CONTENTS

/// HDMI Audio Converter with Dolby® Digital/DTS® 2.0+Digital Out Decoder

/// 5V/2.6A Power Adaptor

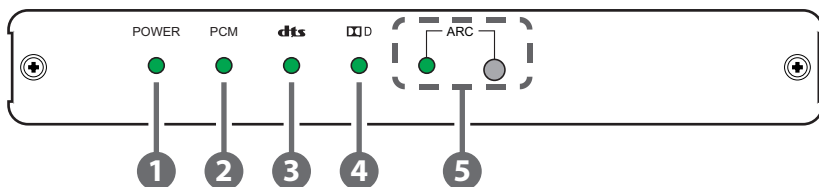/// Operation Manual

4. SYSTEM REQUIREMENTS

HDMI equipped source device and display (TV/monitor) and/or amplifier/active speakers with connection cables.

5. FEATURES

/// HDCP 2.2, HDMI2.0, and DVI compatible

/// Built-in Dolby Digital Decoder

/// Built-in DTS 2.0+Digital Out Decoder

/// Integrated digital interpolator filter and Digital-to-Analog Converter (DAC)

/// Supports HDTV resolutions up to 4K2K: 3840×2160@24/25/30Hz, 4096×2160@24/25/30Hz, 3840×2160@50/60Hz (YUV444) & 4096×2160@50/60 (YUV444)

/// Supports simultaneous audio outputs on HDMI, analogue L/R, Coaxial and Optical

/// Supports Dolby Digital sampling rates up to 48kHz

/// Supports DTS sampling rates up to 96kHz

/// Supports LPCM input sampling rates up to 96kHz

/// Supports coaxial and optical output audio sampling rates up to 96kHz

/// Supports de-embedding the audio signal from an HDTV's ARC (Audio Return Channel) connection
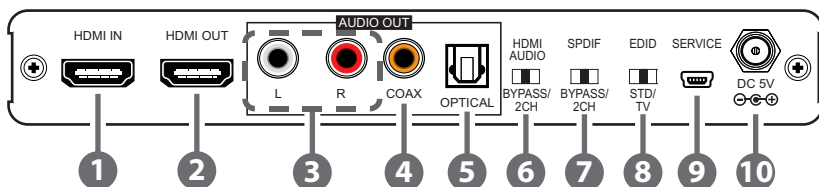
/// Supports up to 3m HDMI cables on input & output

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel

1 **POWER:** This LED will illuminate when the unit is connected to an active power supply.

2 **PCM LED:** This LED will illuminate when the audio source is encoded in LPCM 2CH audio format.

3 **DTS LED:** This LED will illuminate when the audio source is encoded in DTS 2.0+Digital Out audio format.

4 **Dolby LED:** This LED will illuminate when the audio source is encoded in Dolby Digital audio format.

5 **ARC Button & LED:** Use this button to select the HDMI ARC (Audio Return Channel) function. Push this button to enable the HDMI ARC function, the LED will turn on; push this button again to disable the HDMI ARC function, the LED will turn off. When no ARC source is detected, the unit will automatically switch back to the HDMI input.

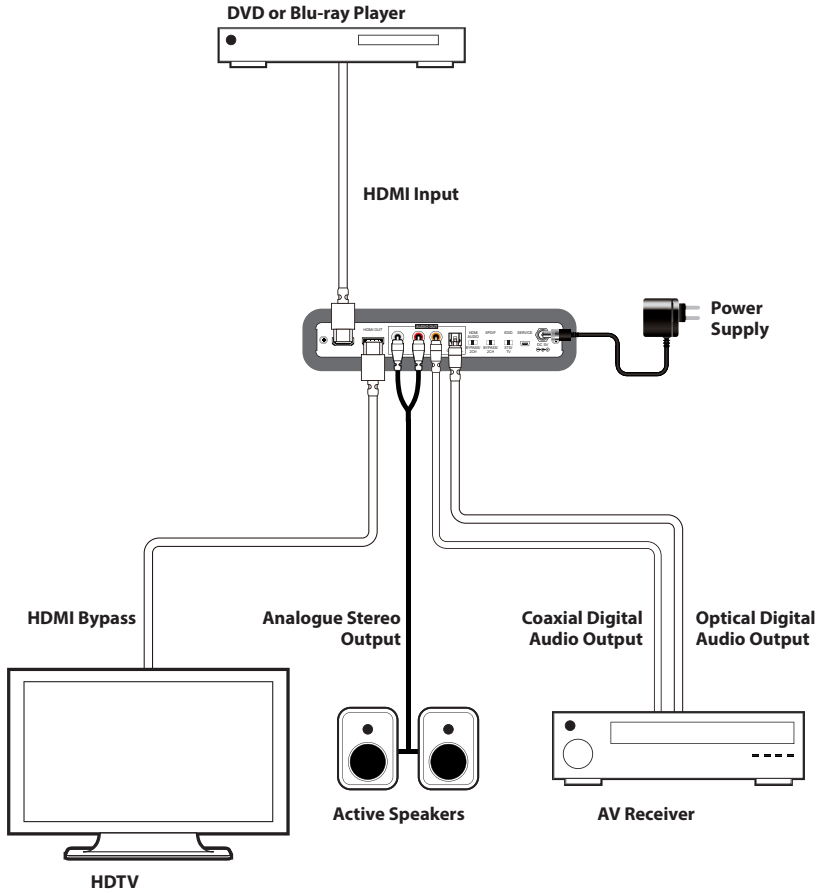## 6.2 Rear Panel

1 **HDMI IN:** Connect to an HDMI source device such as a Blu-ray player, Set-top Box or any HDMI equipped source device.

2 **HDMI OUTPUT:** Connect to an HDMI equipped TV/display or AV receiver for video or audio output.

CYP///

③ L/R OUTPUT: Connect to the analogue line level input of an amplifier or active speakers.

④ COAX OUTPUT: Connect to the digital optical input of an AV receiver.

⑤ OPTICAL OUTPUT: Connect to the digital coaxial input of an AV receiver.

⑥ HDMI AUDIO BYPASS/2CH: Use this switch to select the audio format of the HDMI output. Switch to 'BYPASS' to allow the audio to pass-through from the HDMI input port; switch to '2CH' to enable audio decoding and LPCM 2CH down-mixing of Dolby Digital or DTS audio signals from the HDMI audio source.

⑦ SPDIF BYPASS/2CH: Use this switch to select the audio format of the Coaxial and Optical outputs. Switch to 'BYPASS' to allow the audio to pass-through from the HDMI input port; switch to '2CH' to enable audio decoding and LPCM 2CH down-mixing of Dolby Digital or DTS audio signals from the HDMI audio source.

⑧ EDID STD/TV: Use this switch to select the EDID mode, 'STD (Standard) mode' or 'TV mode'. When in 'TV mode', the unit will automatically detect and store the EDID settings of the display connected to the HDMI output. If there is no picture or a distorted image, please switch to 'STD mode' which will use video up to 1080p at 60Hz and audio up to LPCM 2CH at 48kHz, Dolby Digital 5.1CH and DTS 5.1CH.

⑨ SERVICE: For manufacturer use only.

⑩ DC 5V: Connect the adaptor included in the package to AC wall outlet for power supply.

7. CONNECTION DIAGRAM

DVD or Blu-ray Player

HDMI Input

Power Supply

HDMI Bypass

Analogue Stereo Output

Coaxial Digital Audio Output

Optical Digital Audio Output

Active Speakers

AV Receiver

HDTV

8. SPECIFICATIONS

8.1 Technical Specifications

Video Bandwidth	600 MHz/6 Gbps
Input Ports	1×HDMI, 1×USB (Service only)
Output Ports	1×HDMI, 1×Coaxial, 1×Optical, 1×L/R (2 RCA)
HDMI Cable Length	Input: 10m@1080p, 3m@4K2K Output: 10m@1080p, 3m@4K2K
Power Supply	5 V/2.6 A DC(US/EU standards, CE/FCC/UL certified)
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Dimensions	180 mm (W)×104 mm (D)×25mm (H)/Jacks Excluded 180mm (W)×112.75 mm (D)×25 mm (H)/ Jacks Included
Weight	374 g
Chassis Material	Metal
Colour	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	5.06W

8.2 Video Resolutions

HDMI/DVI RESOLUTIONS	INPUT	OUTPUT
640×480@60/72/75/85	✓	✓
720×400@85	✓	✓
800×600@56/60/72/75/85	✓	✓
1024×768@60/70/75/85	✓	✓
1280×720@60	✓	✓
1280×768@60/75/85	✓	✓
1280×800@60	✓	✓
1360×768@60	✓	✓
1440×900@60	✓	✓
1600×900@60	✓	✓
1600×1200@60	✓	✓
1920×1080@60	✓	✓
1920×1200@60	✓	✓
1440×576i@50	✓	✓
1440×480i@59.94/60	✓	✓
720×480p@59.94/60	✓	✓
720×576p@50	✓	✓
1280×720p@50/59.94/60	✓	✓
1920×1080i@50/59.94/60	✓	✓
1920×1080p@23.97/24/25/29.97/30/50/59.94/60	✓	✓
3840×2160@24/25/30/50/60 (YUV444)	✓	✓
4096×2160@24/25/30/50/60 (YUV444)	✓	✓
3840×2160@60 (YUV420)	✓	✓
4096×2160@60 (YUV420)	✓	✓

8.3 Audio Support Specification

Input Level/ Freq.	Output	Output Level Vrms/db±10%	THD+N	Frequency Response	SNR >90db	Crosstalk <-90dB
HDMI 0dB/1kHz 48~96kHz	Analog	2 Vrms	< 0.01%	±1 dBFS	>104dB	<-110dB
	Coaxial	0 dB	< 0.00001%	±1 dBFS	>141dB	<-164dB
	Optical	0 dB	< 0.00001%	±1 dBFS	>141dB	<-163dB
	HDMI	0 dB	< 0.00001%	±1 dBFS	>141dB	<-164dB

8.4 Input to Output Audio Format

Audio Input	Input Format	Analog L/R	Audio Output			
			HDMI		**S/PDIF**	
			Switch Status		**Switch Status**	
			BYPASS	2CH	BYPASS	2CH
HDMI	LPCM 2CH	Analog 2CH	LPCM 2CH	LPCM 2CH	LPCM 2CH	LPCM 2CH
	Dolby Digital	Decoded Lt/Rt	Bitstream Pass-through	LPCM Lt/Rt	Bitstream Pass-through	LPCM Lt/Rt
	DTS	Decoded Lo/Ro	Bitstream Pass-through	LPCM Lo/Ro	Bitstream Pass-through	LPCM Lo/Ro
HDMI ARC	LPCM 2CH	Analog 2CH	HDMI Pass-through		LPCM 2CH	LPCM 2CH
	Dolby Digital	Decoded Lt/Rt			ARC Bitstream Pass-through	LPCM Lt/Rt
	DTS	Decoded Lo/Ro				LPCM Lo/Ro

9. ACRONYMS

ACRONYM	COMPLETE TERM
DTS	Digital Theater System
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
HDCP	High-bandwidth Digital Content Protectionl
HDMI	High-Definition Multimedia Interface
HDTV	High-Definition Television
LCM	Liquid Crystal Monitor
USB	Universal Serial Bus
VGA	Video Graphics Array
WUXGA	Wide Ultra Extended Graphics Array