key digital KD-DA1x4DC 4K 4 Output HDMI Splitter with Audio De Embed Instruction Manual

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Always follow the instructions provided in this Operating Manual.
Please visit **www.keydigital.com** for the latest product documentation and software downloads.
Product features and specifications are subject to change without notice.

Contents

Introduction

Introduction
Key Digital® KD-DA1x4DC is a 4K 18G HDMI Distribution Amplifier with 4K to 1080p resolution down conversion option to enable a single HDMI video source to be displayed on multiple video displays, regardless of 4K or 1080p resolution support. KD-DA1x4DC is engineered to offer the best quality, performance, and reliability at a cost-effective price point and has been designed for professional audio video installations in digital signage, surveillance monitoring applications, and more. KD-DA1x4DC features L/R analog and optical digital audio de-embed ports, enabling ease of integration into amplifiers, distributed audio systems, or sound bars. KD-DA1x4DC supports all video resolutions up to 4K/UHD, 4:4:4 chroma sub-sampling, 12bit deep color, and HDR. EDID handshaking and Forced Hot Plug Detection professional tools help overcome common HDMI handshaking and integration problems for ease of installation in any environment.

Key Features

- HDMI Signal Distribution: 1 HDMI source to 4 HDMI outputs/displays
- Ultra HD/4K Support: 4096×2160 or 3840×2160 24/25/30/60hz at 4:4:4(signals up to 18Gbps bandwidth)
- HDCP Licensing: Fully licensed and compatible with HDCP 2.2
- HDR10 and Dolby Vision®: More life-like images through a greater range of luminance levels
- Resolution Support: Supports all SD, HD, and VESA (VGA, SVGA, XGA, WXGA, SXGA, UXGA) up to 4096x2160p.
- 4K to 1080p Down Convert: When enabled, resolution conversion is applied to individual output(s) based on EDID from the connected display
- Deep Color Support: Up to UHD/4K 30Hz 4:4:4/12 bits or 60Hz 4:4:4/8 bit
- Audio De-embedding: Audio of the connected HDMI input is output at the digital Optical and analog 3.5mm stereo connectors.
- Full Buffer System™: Manages TMDS re-clocking / signal re-generation, HDCP authentication to source &

display, and EDID Control handshake

- EDID Management: Internal library with 15 internal EDID handshakes including 4K with HDR in addition to native EDID data copied from output/display 1
- Digital Audio Format Support: DTS-HD Master Audio™, DTS:X®, Dolby® TrueHD, Dolby Atmos®
- CEC Disconnect: Prevents unwanted control of source

Included Accessories

- Power Supply: KD-PS5V1ASC 5V/1A DC power jack, screw-in type
- Mounting Brackets: 2 L-shaped
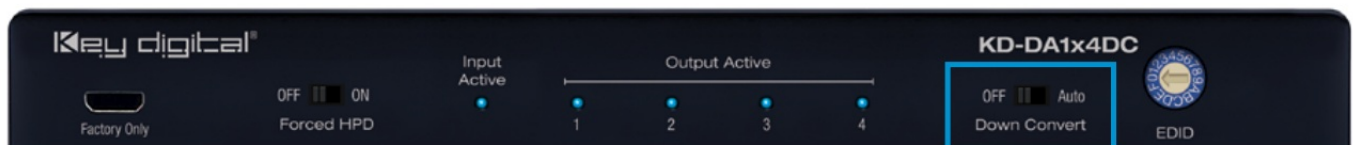
Quick Setup Guide

CONNECT:

Test for proper operation of the unit and cables in your system before permanently securing the unit for final installation.
Ensure that you leave enough ventilation space to provide sufficient airflow and cooling.
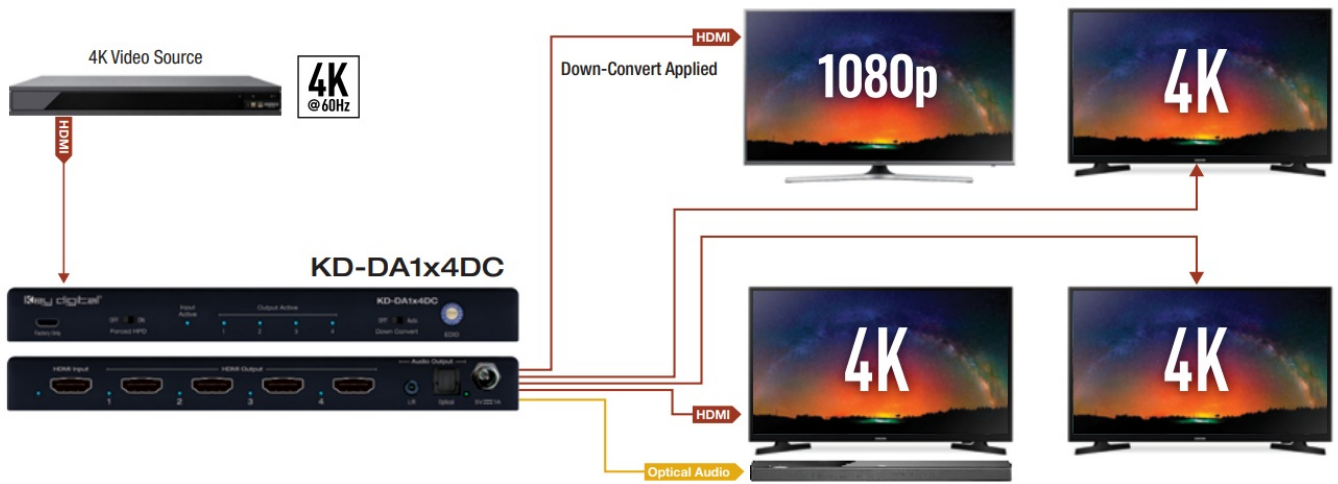
1. Begin with the KD-DA1x4DC unit and all input/output devices turned off with power and HDMI cables removed
2. Connect your HDMI source to the input port of KD-DA1x4DC unit
3. Connect your HDMI displays to the output ports of KD-DA1x4DC unit
4. Connect the analog and/or digital audio amplifiers/receivers via the analog 3.5mm and optical outputs
5. BEFORE connecting power supply to power outlet, screw-in the power supply to the KD-DA1x4DC unit
6. AFTER ALL CONNECTIONS ARE MADE, plug-in power supply to power outlet
7. Power on input and output devices

CONFIGURE:

The default position of the Down-Convert switch is **OFF.** If sending 4K content to 4K and 1080p displays, set to the **AUTO** position.
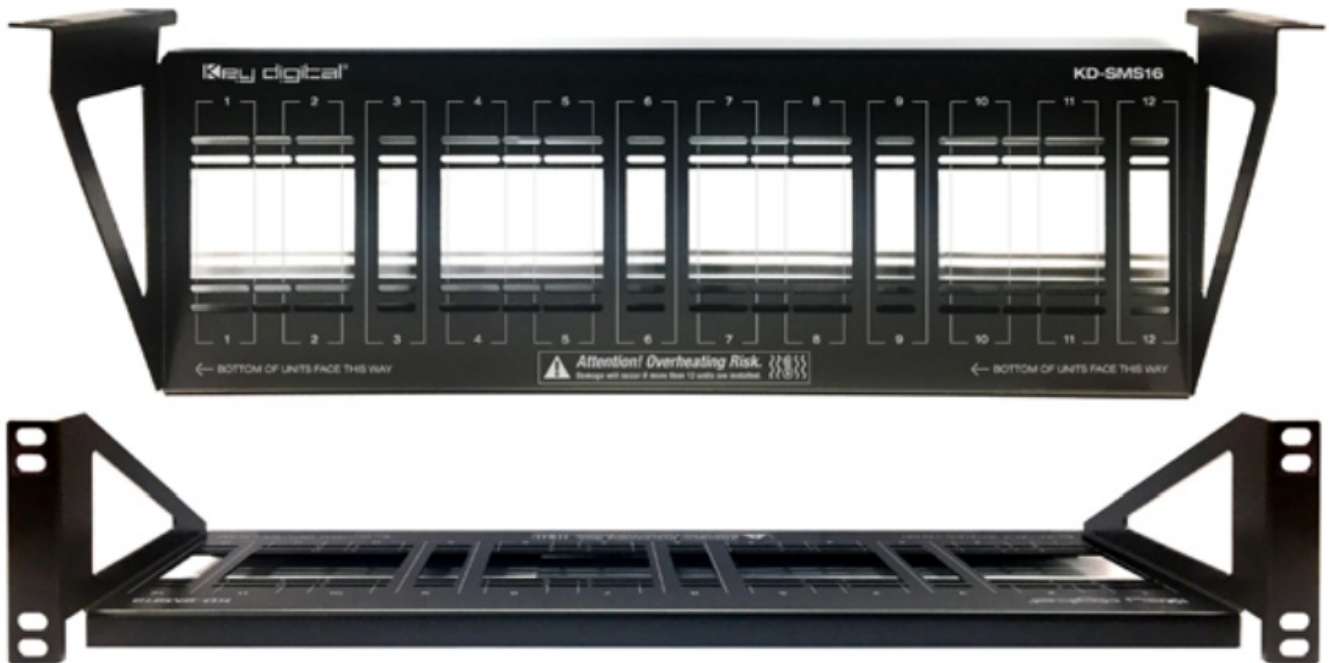

Application Example

Rack Mounting:

Do NOT exceed 12 units as doing so will result in unit damage by overheating.

Front & Rear Panel Connections, Buttons, and LEDs

REAR PANEL

HDMI Inputs

- The HDMI input is located on the left side of the back panel.
- Blue LED illuminates solid to indicate an active HDMI signal is incoming.

HDMI Outputs

- 4 HDMI outputs are located on the center to right side of the back panel.
- Blue LED illuminates solid when Hot Plug Detection (HPD) is received from the connected display/output device

HDMI Input/Output Port Specifications

- Supports up to UHD/4K @ 50/60 fps [4:4:4], 18Gbps signals
- Supports HDR10. Compliant with HDCP 2.2 and previous.
- Supports lossless compressed audio formats including Dolby® TrueHD, Dolby® Digital Plus, Dolby Atmos®, and DTS-HD Master Audio™
- CEC Channel is not connected within unit, which prevents the source from receiving CEC commands from displays. This is non-adjustable.
- For Display Port sources/monitors, use active converters

Supported standard 4K Video Formats:

	Resolution	Bandwidth
1	4K@24/25/30 [4:4:4] 8bit	< 10 .2Gbps
2	4K@24/25/30 [4:2:2] 8/10/12bit	< 10 .2Gbps
3	4K@50/60 [4:2:0] 8bit	< 10 .2Gbps
4	4K@24/25/30 [4:4:4] 10/12bit	< 18Gbps
5	4K@50/60 [4:2:2] 8/10/12bit	< 18Gbps
6	4K@50/60 [4:2:0] 10/12bit	< 18Gbps
7	4K@50/60 [4:4:4] 8bit	< 18Gbps

Analog L/R Audio Output

- 3.5mm stereo jack with de-embedded audio from the selected HDMI source
- Automatically mutes if audio formatting is not PCM 2ch
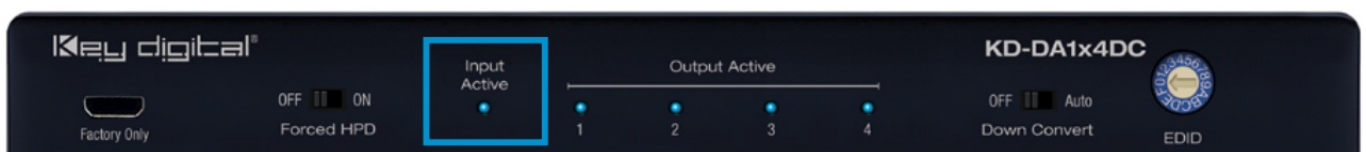
Optical Audio Output

- Optical audio output with de-embedded audio from the selected HDMI source
- SPDIF IEC 60958 format
- Supports multi-channel Dolby® and DTS™ surround formats up to 5.1
- Automatically mutes if audio formatting is not PCM, Dolby®, or DTS™

Audio Ports Specifications

- Each audio output drives audio signals up to 2VRMS with a sampling rate of 192KHz
- There are no volume or tone control features
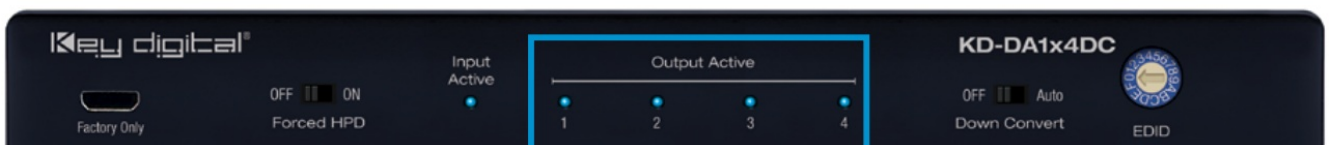- There are no DSP features

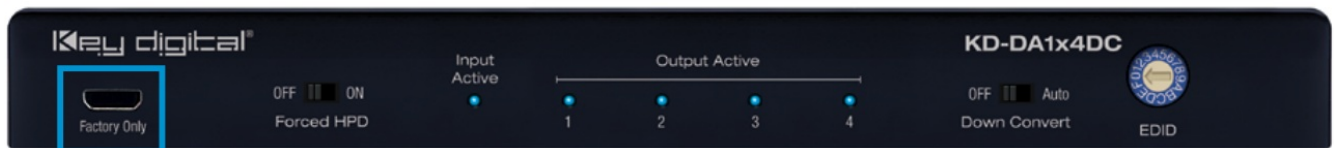| Audio Input Signal Format	Audio L/R Output	Digital Audio Output (Optical)
2ch PCM	Pass-Through	Pass-Though
Multi-Channel PCM	Front L/R Pass-Through	MUTE
Dolby DTS	MUTE	Pass-Though
HD Audio	MUTE	MUTE

FRONT PANEL

Input Active LED

- 1 blue LED illuminates solid to indicate an active incoming HDMI signal
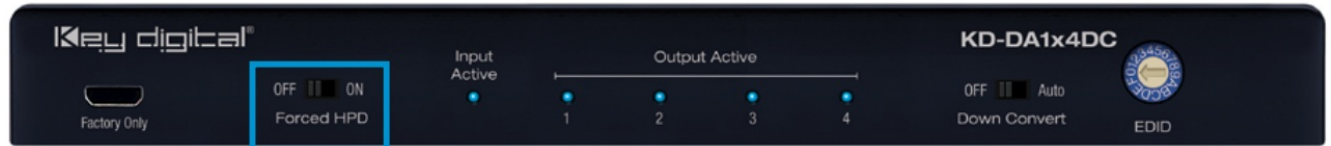- LED blinks steadily if there is no active incoming signa

Output Active LED

- 2 blue LEDs illuminate solid when Hot Plug Detection (HPD) is received from the connected display/ output device and there is an active incoming HDMI signal from video source.
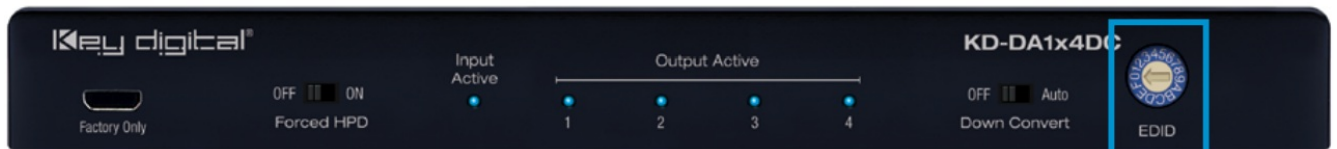
Service (Factory) USB

- This port is for factory servicing only. Does not have standard USB functionality.

Forced HPD Troubleshooting Tool

- When ON, Hot Plug Detection voltage is fixed on to the connected display
- Standard HPD behavior when set to OFF position
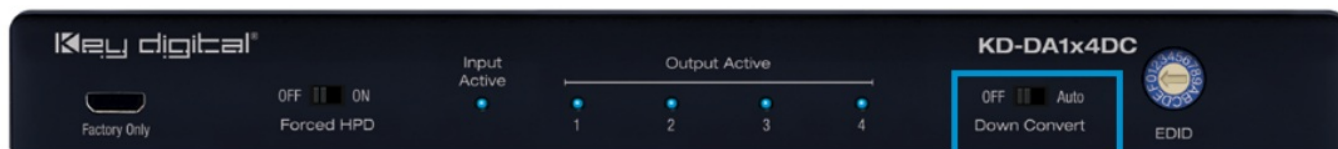

EDID Handshaking Rotary

- EDID authentication is provided from the unit to the connected inputs/sources.
- The EDID file (AKA "handshake") is selected using the EDID rotary on the unit and provides a list of compatible video and audio formats as well as digital data, informing the source device what it should output.
- Most sources will comply with a new EDID file without a power-cycle, but devices do behave differently
  - Adjustments may speed up sync time during source selection

IMPORTANT: Please apply light pressure to the EDID rotary when making your selection.1280x720p@60 DVI (no audio)

Position	EDID Handshake Description	EDID Rotary
0	Copy EDID from HDMI Output 1	
1	1080i, 2CH AUDIO	
2	1080i, DOLBY/DTS 5 .1	
3	1080i, HD AUDIO	
4	1080p, 2CH AUDIO	
5	1080p, DOLBY/DTS 5 .1	**Note:** Default position is " A"
6	1080p, HD AUDIO	
7	4Kx2K@60, 10 .2G, HDR, 2CH AUDIO	
8	4Kx2K@60, 10 .2G, HDR, DOLBY/DTS 5 .1	
9	4Kx2K@60, 10 .2G, HDR, HD AUDIO	
A	4Kx2K@60, 18G, HDR, 2CH AUDIO	
B	4Kx2K@60, 18G, HDR, DOLBY/DTS 5 .1	

C	4Kx2K@60, 18G, HDR, HD AUDIO	**IMPORTANT:** Please apply light pressure to the EDID rotary when making your selection.
D	1280x720p@60 DVI (no audio)	
E	1920x1080p@60 DVI (no audio)	
F	4Kx2K@30, 10 .2G, HDR, 2CH AUDIO	

Note: For Dolby Vision®, you must connect the Dolby Vision® supported display/device to Output 1, and the EDID rotary must be set to 0. Dolby Vision® signals may not be down converted.
Black image / no image will result.

4K to 1080p Down Convert Tool

- When set to AUTO, KD-DA1x4DC will down convert incoming 4K content to 1080p for an individual output only if the EDID file from that individual display informs KD-DA1x4DC that the connected displays supports 1080p (not 4K).
- Down Convert works individually. KD-DA1x4DC can apply resolution down conversion to any output without affecting the other output.

Specifications

Technical:

- Input: HDMI Connector, Type A, 19 Pin Female
- Output (Each): HDMI Connector, Type A, 19 Pin Female
- Bandwidth: TMDS bandwidth 18 Gbps
- DDC Signal (Data): Input DDC Signal – 5 Volts p-p (TTL)
- HDMI Video/Audio Signal: Input Video Signal – 1.2 Volts p-p
- Power Supply: KD-PS5V1ASC 5V/1A, 100-240VAC, 50-60Hz, Interchangeable head, screw-in connector

General

- Regulation: CE, RoHS, WEEE
- Enclosure: Black Metal
- Product Dimensions: 7.4" x 2.72" x 0.78" (188 x 69.2 x 19.9mm)
- Packaging Dimensions: 9.44" x 5.67" x 3.15" (240 x 144 x 80mm)
- Product Weight: 0.7 lb
- Shipping Weight: 1.4 lb

Important Product Warnings:

1. ⚠️ Connect all cables before providing power to the unit.
2. Test for proper operation before securing unit behind walls or in hard to access spaces.
3. If installing the unit into wall or mounting bracket into sheet-rock, provide proper screw support with bolts or sheet-rock anchors.

Safety Instructions:

Please be sure to follow these instructions for safe operation of your unit.

1. ⚠️ Read and follow all instructions.
2. Heed all warnings.
3. Do not use this device near water.
4. Clean only with dry cloth.
5. Install in accordance with the manufacturer's instructions.

6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

7. Only use attachments/accessories specified by the manufacturer.

8. Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way including:

   - Damage to the power supply or power plug
   - Exposure to rain or moisture

Power Supply Use:

⚠️ You **MUST** use the Power Supply **PROVIDED** with your unit or you **VOID** the Key Digital® Warranty and risk damage to your unit and associated equipment.

Contacting Key Digital®

Technical Support

For technical questions about using Key Digital® products, please contact us at:

- Phone: 914-667-9700
- E-mail: **tech@keydigital.com**

Repairs and Warranty Service

Should your product require warranty service or repair, please obtain a Key Digital® Return Material Authorization (RMA) number by contacting us at:
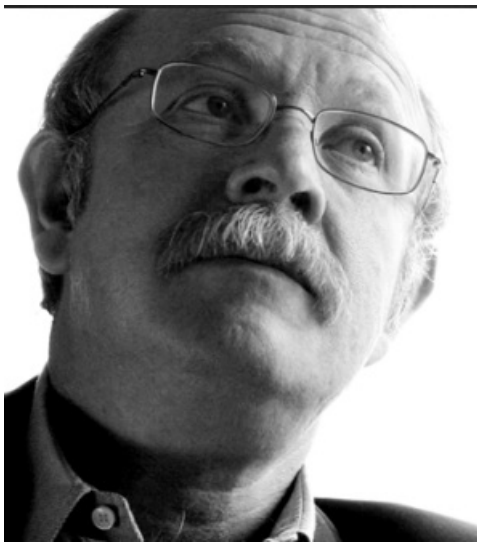
- Phone: 914-667-9700
- E-mail: **rma@keydigital.com**

Warranty Information

All Key Digital® products are built to high manufacturing standards and should provide years of trouble-free operation.
They are backed by a Key Digital Limited 3 Year Product Warranty Policy: **https://keydigital.org/warranty**

Key Digital®, led by digital video pioneer Mike Tsinberg develops and manufactures high quality, cutting-edge technology solutions for virtually all applications where high-end video and control are important. Key Digital® is at the forefront of the video industry for Home Theater Retailers, Custom Installers, System Integrators, Broadcasters, Manufacturers, and Consumers.

Visit the product page for most recent version of the manual, quick setup guide, firmware, control drivers and all additional downloads.

Customer Support

Documents / Resources

	key digital KD-DA1x4DC 4K 4 Output HDMI Splitter with Audio De Embed [pdf] Instruction Manual KD-DA1x4DC 4K 4 Output HDMI Splitter with Audio De Embed, KD-DA1x4DC, 4K 4 Output HDMI Splitter with Audio De Embed, Splitter with Audio De Embed, Audio De Embed

References

- 🌐 **keydigital.com**
- ◪ **Key Digital | Warranty**
- **User Manual**