

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

KD-HDFIX22

HDMI Extender, Booster & Buffer of EDID
with built-in Audio De-Embedder of
Digital Coaxial & Analog L/R,
supports HDCP 2.2, TMD5, HPD, Ultra HD/4K

Setup Guide



Key digital®

Key digital®

The Experts in Digital Video Technology and Solutions™

Key Digital® Systems :: 521 East 3rd Street :: Mount Vernon, NY 10553

Phone : 914.667.9700 Fax : 914.668.8666 Web : www.keydigital.com

Table of Contents

About KD-HDFIX22	1
Connections	2
Audio De-Embed Outputs	3
LED Indicator Lights	3
Forced HPD	4
Quick Setup Guide	4
EDID Control	5
RS-232 Commands	6
Specifications	8
Important Product Warnings & Safety Instructions:	9
How to Contact Key Digital®	10
Warranty Information	11

**Ultra
HD/4K**



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.



Please read all instructions to insure safe operation of the product.

© 2015 Key Digital, Inc. All rights reserved.

About KD-HDFIX22

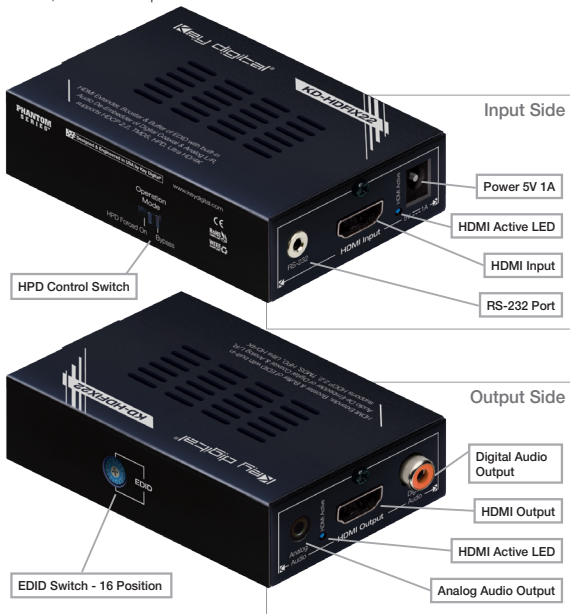
- › **Extension:** Capable of extending UHD/4K and 1080p resolution up to 75 ft. / 23 m. in and 75 ft. / 23 m. out (150 ft. / 46 m. total)
- › **HDMI Correction:** Resolves common HDMI integration obstacles such as HDCP, EDID, HPD, and audio breakout
- › **Resolution Support:** Supports all SD, HD, and VESA resolutions up to Ultra HD/4K, 3D and 1080p/60 (60Hz & 50Hz)
- › **4K/Ultra HD:** Support for 4096x2160 or 3840x2160 24/25/30Hz at 4:4:4 or 60Hz at 4:2:0.
- › **HDCP 2.2:** Compliancy up to HDCP 2.2
- › **3D Ready:** Capability to pass 3D stereoscopic signal formats
- › **Full Buffer System™:** Manages TMDS re-clocking / signal re-generation, HDCP authentication to source & display, and EDID Control handshake
- › **Audio De-Embedding:** Audio from the HDMI input is de-embedded through the Coax digital (PCM) and/or Analog L/R audio output
- › **Auto-EQ:** Precise signal equalization applied to input and output signals automatically delivers best possible picture quality
- › **EDID Control:** 15 internal EDID tables or EDID copy from output/display
- › **Forced HPD:** Enables integrator to choose if active signal voltage is forced to connected input device
- › **Licensing:** Fully licensed and compatible with all HDMI and HDCP technologies
- › **I2C Communication:** EDID and HDCP authentication to Display and Source
- › **RS-232 Controllable:** Control of unit and connectivity status
- › **CEC Support:** For inter-device control between main input and output HDMI channel
- › **Deep Color Support:** Up to 16 bits/color at 1080p/60
- › **Signal rates:** Up to 3.4 Gb per second

Accessories

- › 5V 1A DC Power Supply

Connections

The KD-HDFIX22 provides: 1x HDMI Input and 1x HDMI Output, a 3.5mm stereo jack for analog audio output, an RCA for digital audio output, a 3.5mm stereo mini-jack for control of the unit or firmware updates, a 16 position rotary EDID switch, and a 5V 2A power connection.



Audio De-Embed Outputs

Analog L/R Audio Output (3.5mm Stereo):

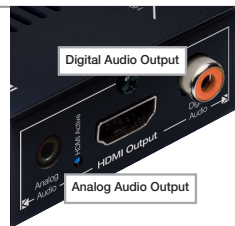
- Provides de-embedded 2ch analog audio output from HDMI input source

Digital Audio Output (Digital Coaxial RCA):

- Provides de-embedded Digital Audio Output from HDMI input

Notes:

- There are no volume or tone control features
- There are no DSP features. I.e, in order to achieve 2ch analog audio output, the HDMI input source audio format must be 2ch



Audio Input Signal Format	Analog L/R Output	Digital Audio Output
2CH PCM	Pass-through	Pass-through
Multi-Channel PCM	MUTE	MUTE
DOLBY/DTS	MUTE	Pass-through
HD Audio	MUTE	MUTE

LED Indicator Lights

- HDMI Active LED:** Blue
- Input:** Solid illumination during active signal (TMDS) with connected HDMI source device
 - If Hot Plug Detection is forced to input device from unit, the HDMI Active light will illuminate solid regardless of HDMI signal from connected device.
 - If audio de-embed without connected HDMI output is desired, set the Operation Mode dipswitch to HPD Forced On
- Output:** Solid illumination during active link (voltage + data link) with connected HDMI output device
- Blinking:** If power is applied without any connected input and output device

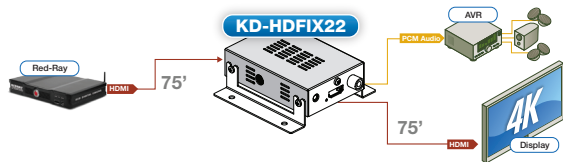
Forced HPD

When the Operation Mode dipswitch is set to HPD Forced On, Hot Plug Detection (HPD) voltage is forced on the KD-HDFix22 unit in order to provide the connected source device with necessary voltage to inform the device that a partner (output/display) is connected and active. If the Operation Mode dipswitch is set to the Bypass setting, HPD signals from the output to the input device will pass as normal. In cases of many layers of connectivity, HPD may be lost leading to no signal at the display. In those cases, set the Operation Mode dipswitch to Forced HPD On.



Quick Setup Guide

- > With the power supply disconnected, connect the source's HDMI cable to the Input and the Display's HDMI cable to the Output.
- > If a specific EDID is required, set it now (see 'Settings' below for more information regarding EDID).
- > If using the external audio output, make the connection at this time.
- > At this point you may power on your display.
- > Then, power KD-HDFIX22 followed by the source.



EDID Control

EDID authentication is provided from the KD-HDFIX22 unit to the connected input / source device. The EDID file (AKA "handshake") is selected using the EDID Control 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 each source may behave differently. Adjustments may be necessary to help achieve desired video and audio formatting and may speed up sync time. The possible EDID settings can range from '0' to '9' and 'A' to 'F'. ('0' is the default).

0	Copy EDID from HDMI Output	A	4Kx2K@60, 2CH AUDIO
1	1080i, 2CH AUDIO	B	4Kx2K@60, DOLBY/DTS 5.1
2	1080i, DOLBY/DTS 5.1	C	4Kx2K@60, HD AUDIO
3	1080i, HD AUDIO	D	1280x720p@60 DVI
4	1080p, 2CH AUDIO	E	1920x1080p@60 DVI
5	1080p, DOLBY/DTS 5.1	F	3840x2160p@30 DVI
6	1080p, HD AUDIO		
7	4Kx2K@30, 2CH AUDIO		
8	4Kx2K@30, DOLBY/DTS 5.1		
9	4Kx2K@30, HD AUDIO		



Rotary EDID Control Switch:

IMPORTANT! Please apply light pressure to the EDID rotary when making your selection.

RS-232 Commands

Connection protocol is as follows:

- › Baud Rate = 57600 bits per second
- › Data Bits = 8
- › Stop Bits = 1
- › Parity = None
- › Flow Control = None
- › Carriage Return: Required
- › Line Feed: Required

RS-232 Pinout:

Tip	Ring	Sleeve	
Tx	Rx	Ground	

Commands are not case-sensitive. Spaces shown below may be excluded.
Carriage return and line feed is required at the end of each string.

Commands:

KD-HDFIX22> H

```
-----
--          Key Digital Systems HELP          --
-----
-- KD-HDFIX22      System Address = 00      F/W Version : 1.00
--
-- Azz      : All Commands may have Prefix System Address zz=[01-99]
-- H        : Help
-- STA      : Show Global System Status
--
```

```
-- Video Output Setup Commands:
-- SPO ON/OFF      : Set Output 01 ON/OFF
-- SPO DBG ON/OFF  : Set Debug Mode ON/OFF
--
-- Audio Output Setup Commands: [E=Enable, D=Disable]
-- SPO AA E/D      : Enable/Disable External Analog Audio Output
-- SPO DA E/D      : Enable/Disable External Digital Audio Output
--
-- System Address Setup Command: xx = [00-99], 00 = Single
-- SPC Axx         : Set System Address to xx
--
-- System Control Setup Commands:
-- SPC RSB z       : Set RS232 Baud Rate to z bps, z=[0-4]
--                  [0:57600, 1:38400, 2:19200, 3:9600, 4:4800]
-- SPC DF          : Reset to Factory Defaults
```

Status:

KD-HDFIX22> STA

```
-----
--          Key Digital Systems STATUS          --
-----
-- KD-HDFIX22      System Address = 00      F/W Version : 1.00 --
--
-- RS232 : Baud Rate=57600bps, Data=8bit, Parity=None, Stop=1bit --
--
-- Video Input : EDID = DEFAULT 00, LINK = ON
-- Video Output : Output = ON , LINK = ON , DBG = OFF
-- Audio Output : Analog = Enabled, Digital = Enabled
-----
```

Specifications

- › HDMI Connector: Type A 19 Pin Female
- › Advanced HDMI features: Ultra HD/4K, 3D
- › Audio: Supports DTS-HD, Dolby True HD and 2 CH PCM
- › External Analog Audio: supports 2 Channel PCM audio only, NO Multi-Channel, PCM, Dolby, DTS or HD audio support
- › HDMI Video/Audio signal: 1.2V p-p
- › DDC Signal: 5V p-p (TTL)
- › Regulation: CE, RoHS, WEEE
- › Power Supply: KD-PS5V1A, 5V/1A, 100-240VAC, 50-60Hz, Interchangeable head
- › Product Dimensions: 3.6" x 2.5" x 1", Weight: 4 oz
- › Shipping Dimensions: 6.3" x 4.2" x 3.3", Weight: 16 oz
- › Enclosure: Black Metal



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.

How to Contact Key Digital®

System Design Group (SDG)

For system design questions please contact us at:

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

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

Feedback

Please email any comments/questions about the manual to:

- › E-mail: customersupport@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 Lifetime Product Warranty Policy.

» <http://www.keydigital.com/warranty.htm>

